

148007

Exhibit 3.2

Information Requests No. 8-17

CONFIDENTIAL BUSINESS
INFORMATION

Pursuant to 40 CFR Part 2, Subpart B, Monsanto Company hereby asserts a business confidentiality claim covering this Exhibit and all documents attached thereto.

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Welcome to



William G. Krummrich
Plant

Monsanto, Illinois

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

CER 000192

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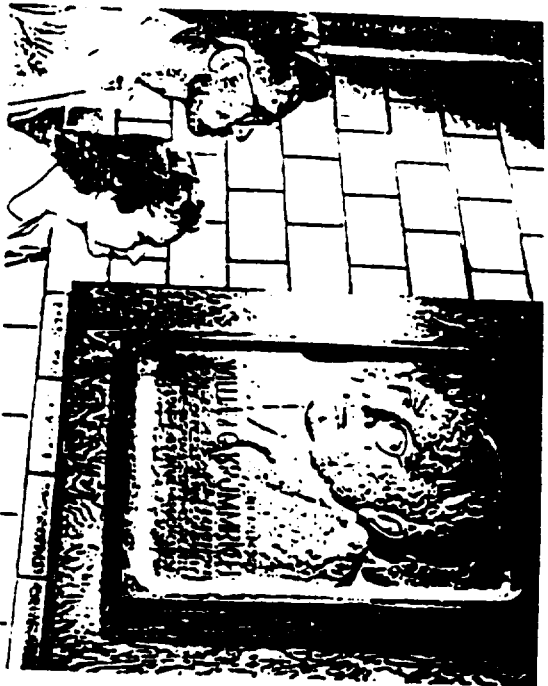
Welcome to the Krummrich Plant Open House



I'm Joe Cresce, the plant manager. I am pleased that I can speak for all of us who work here and tell you we are glad you have come to visit us. Signs have been placed around the plant explaining some of the equipment and operations and there are also guides to help you. They will answer any questions you have. Please ask them.

We hope you have an interesting and pleasant visit.

661000 833



The plant was renamed in honor of W. G. Krummich on April 16, 1951. This plaque was placed inside the office entrance after the ceremony.

The History of the W. G. Krummich Plant

In a few short weeks, November 1 to be exact—the W. G. Krummich Plant will have completed 30 years of operation. It was on this date in 1921 that John F. Querrey, the founder of Monsanto Chemical Company, purchased the plant

from the Commercial Acid Company.

The William G. Krummich Plant of the Organic Chemicals Division is the second oldest plant in Monsanto's organization. It was purchased by Mr.

Querrey to assure the company a supply of mineral acids.

For many years the plant was known as "Plant B." Then in February 1951, when William G. Krummich, general manager of the Organic Division and a vice-president of Monsanto was stricken with a fatal illness, the employees petitioned the Executive Committee to rename the plant in his honor. This was done on April 16, 1951.

When Monsanto purchased the Commercial Acid Company it was a small plant occupying about 20 acres and employing from 70 to 100 people. The principal products at that time were sulfuric, nitric and nitrolic acids. The demand for these products and others, has steadily grown until today, the Krummich plant covers approximately 240 acres and employs about 2000 people. Of the 240 acres, 110 are available for expansion purposes if products can be manufactured more economically here than other areas where Monsanto owns plants. Heavy acids are still a major portion of our production.

Through the ingenuity, foresight and research of Monsanto people, new products have been developed for manufacture at the Krummich Plant. In 1947, for example, eight products were manufactured—sulfuric

nitric, phosphoric and chlorosulfonic acids, zinc chloride, phenol, soft coke, and nitro coke. Today more than 100 products are manufactured here.

Much of Krummich Plant's steady growth has resulted from the hard work of its employees and capable managers. Special mention is deserved by the "volunteers" who saw it through the more difficult days. One of the first and best known "volunteer" plant managers during its infancy was Dr. J. F. Nickell. He later became chairman and managing director of Monsanto Chemicals, Limited, in London, England, until his retirement.

Successors to Dr. Nickell have been F. H. Langrock, now technical adviser to the general manager of the Company's Engineering and Research Division, D. S. Dismore, who held the reins of the Krummich Plant until he became assistant general manager of the Organic Chemical Division, W. G. Krummich who became general manager of the Organic Chemical Division and a vice-president of Monsanto, P. M. Thompson who became administrative assistant to the general manager of the Organic Division, R. S. Wolcott, technical production manager of the Organic Division, and Joe Cressie who became plant manager in 1951.

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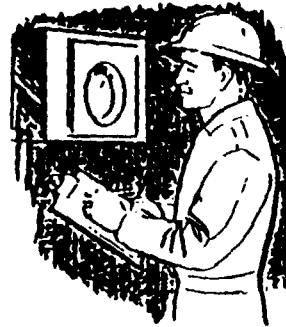
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The Krummrich Plant Organization

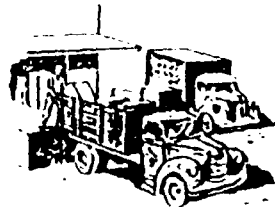
The Krummrich Plant organization is made up of 12 functional groups: Accounting, Laboratory, Maintenance and Construction, Personnel, Production, Purchasing, Safety, Stores, Technical Services, Training, Utilities, Warehousing and Shipping.

Production

The production groups are responsible for processing the raw materials into finished products. They are also responsible for maintaining planned schedules of production, meeting specifications set up by the Sales Department based on the demands of our consumers. These production groups made more than 1,500,000,000 pounds of finished goods last year. If this material were put into tank cars, it would fill a train 160 miles long, the distance from East St. Louis to Peoria, Illinois.



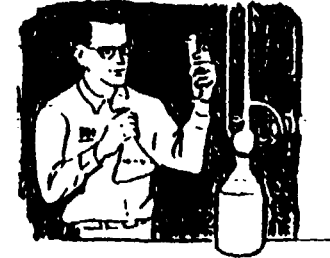
Warehousing and Shipping



The Warehousing and Shipping group is responsible for procuring, receiving, storing and distributing raw materials. They also store, move and ship finished goods. In addition, they assist in production planning and in the control of inventories. They also maintain and repair tank cars and other equipment vital to the movement of raw materials and finished products. The amount of warehouse space we have in this plant could easily accommodate three college football fields.

CER 000196

Laboratory



The Laboratory group provides the various plant and divisional departments with chemical analysis service. In doing this, they conduct analyses of materials in process and prior to shipment so that all products meet the required specifications. These people run about 1,000,000 tests in a year's time so that our customers are assured of purchasing products of the highest possible quality.

Purchasing

The Purchasing group is responsible for buying all equipment and material necessary for the operation, maintenance, and repair of the plant. More than 20,000 different items are purchased during a year from our suppliers.



Safety



The Safety group directs the plant accident prevention program and works with the plant doctor in maintaining the good health of the employees. However, the responsibility for safety rests with the line organization. Fire protection activities are also a responsibility of the Safety Department. The Krummrich Plant is a safe place to work. Recently, we worked 1,784,293 man hours without a disabling injury. This number of hours is equivalent to one person working safely 40 hours a week, starting to work 65 years after the death of Christ and working until last year before he was disabled. Last year, the frequency rate in the plant—the number of disabling injuries per million manhours—was .26 compared to a rate of .95 for all Monsanto plants, a rate of 1.48 for the chemical industries, and a rate of 6.48 for all industries.

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Stores

The Store group receives, stores, distributes, and accounts for all mechanical stores and supplies. This group of people handle approximately 19,000 individual items—from nuts and bolts to stainless steel tanks.



Accounting

The Accounting group administers all phases of accounting policies, procedures, and practices. They are responsible for furnishing the financial information to Divisional and Company accounting groups. They also process all hourly pay checks here at this plant, distributing about \$8,000,000 per year in wages to employees in the local area.



Technical Services

The Technical Services group provides engineering service for the plant. They coordinate engineering activities with department superintendents, with engineering groups at other plants, and with the Engineering and Research Departments of the Company.



Training

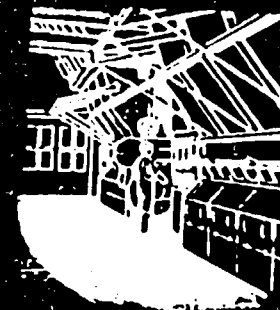
The function of the Training group is to work with line management in determining training needs, planning programs, checking on results, and to help in selecting, training and evaluating instructors.



CER 000198

Utilities

The Utilities group is responsible for supplying the plant operations with an adequate amount of steam, electricity, and water. The Powerhouse uses about 600 tons of coal a day, and produces enough electricity to light three hundred thousand 100-watt bulbs. The plant uses an average of 15,000 gallons of water per minute in a day's operation. Enough steam is generated in one day in the power plant to heat over 11,000 average homes.



Personnel

The personnel group assists and advises line management in its relations with employees. They are responsible for hiring new employees; advising and counseling the line organization in the handling of labor relations with our two Unions; counseling retiring employees; administration of employee benefit plans such as insurance, pension, education, military service, stock purchase, etc.; cafeteria; the cleanliness of service facilities; and the distribution of safety equipment and company clothing.



Maintenance and Construction

The Maintenance and Construction groups are responsible for maintaining and repairing the production units, and the plant in general. Production departments are shut down periodically for overhaul, inspection, and repair, and the maintenance groups are usually involved in the work. A program of preventive maintenance is also carried on by the maintenance groups.



CER 000199



Krummrich Plant Products and Industries Which Use Them

Agricultural

2, 4 Dichlorophenoxyacetic Acid
Muriatic Acid
Nitric Acid
Phosphoric Acid
Santochlor
Santophen 20
Sulfuric Acid

Appliances

Muriatic Acid
Phosphoric Acid
Sulfuric Acid

Automotive

Battery Acid
Caustic Soda
Chlorine
Muriatic Acid
Nitric Acid
Phenol
Phosphorus Pentasulfide
Santolube Oil Additives
Tricresyl Phosphate (TCP)

Ceramic and Glass

Aroclors
Phosphoric Acid
Salt Cake
Santomerse

Cosmetics

Benzyl Chloride
Caustic Soda
Phosphoric Acid

Drugs and Pharmaceuticals

Benzyl Chloride
para-Chlorophenol
Phenol
Phosphorus Oxychloride
Phosphorus Trichloride
Potassium Phenylacetate
Santomerse
Santophen 1

Dyestuffs

Aniline
Chlorobenzene
ortho-Chlorophenol

Dyestuffs

Chlorosulfonic Acid
ortho-Nitroaniline
Dinitroaniline
Cyclohexylamine
para-Nitroaniline
Dinitrochlorobenzene

Graphic Arts

Dinitrochlorobenzene
Phenol
Santomerse

Insecticides and Fungicides

Cyclohexylamine
Santochlor
Phosphorus Pentasulfide
Phosphorus Pentoxide
2, 4 Dichlorophenol
Monochloroacetic Acid

Lumber

Santobrite
Santophen 20

Paper

Aroclors
Chlorine
Muriatic Acid
Sodium Sulfite
Sulfur Dioxide

Plastics

Aroclors
49 Catalyst
para-Nitrobiphenyl
Phenol
Triphenyl Phosphate

Soaps and Detergents

Chlorosulfonic Acid
Santomerse
Fatty Acid Chloride
Dodecylbenzene

Textiles

Caustic Soda
Chlorine
Phenol
Phosphoric Acid
Tricresyl Phosphate

CER 000200

CER 000201

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Krummrich Plant People

The people who operate the Krummrich Plant are a very vital part of our business. Without our people we would be unable to produce one pound of chemicals, regardless of our supply of raw material or the amount of money available. Our people produce quality chemicals, repair equipment, make steam and electricity, ship products, supply services and guard our property. They supply the brawn and brains. Many of our people are Monsanto stockholders. They play an important part in the growth of the company and the communities in which they live. In the words of T. M. Martin, president of Monsanto's Lion Oil Division: "Our most important, our most valuable, our most highly-prized asset is not our oil wells; our research, refining, or chemical plants; our transportation or marketing facilities. It is our hand-picked group of employees, both men and women, who have so successfully conducted the company's affairs. This embraces, of course, indirectly if not directly, the families of our employees."

Money needed to build, maintain and operate our plant is obtained largely through the sale of our products and by selling stock. It takes a great deal of money to buy raw materials and new equipment to provide steady employment and other

benefits for our employees. It requires the investment of many thousands of dollars to provide a job for one person.

The company has prided itself in providing steady work, an advantage we all recognize. For example, 89 percent of our people who were with us 15 years ago are still with us today. A job here also carries other advantages—advancement, paid vacations, paid holidays, a liberal insurance program, and an excellent pension plan. Recognizing early the need for economic security, Monsanto established its insurance program in 1929 followed by the pension plan in 1940, one of the first industrial pension plans in the country.

Money has provided for expansion which in turn has provided more jobs. From eight products to over 100 products; from 20 acres to over 250 acres; from 70 employees to 2,000 employees, is evidence of 40 years of prosperity. New products and demands for old products during these years have meant more equipment, more buildings and more people.

The Krummrich Plant and its people have prospered for 40 years. The constantly increasing use of our products and our ability to produce them economically will carry us further into the future and to a better way of life.

Krummrich Plant Employees As of October 1, 1957

ADMINISTRATIVE

JOE CHESCE, Plant Manager

JOSEPH SHROY

ACCOUNTING

WYATT MONTGOMERY,
Plant Accountant

Administrative and Supervisory

BERTRAM, WILLIAM
BRIGHT, LEROY
BUSS, ROBERT
CORICCI, FRANCIS
DAVES, EDWARD
EGANON, JAMES
ELLERBUSCH, MORRIS
GOODWIN, KENNETH
HARRIS, EDNA
HART, EARL
JACKSON, LYNN
KRONSHEN, EDWARD
MELLIGOT, ELIZABETH
MUELLER, ARTHUR
PARROTT, ARTHUR
POGUE, JOHN
RACHELL, MAX
REA, MARGARET
RIGNEY, CHARLES
ROSSON, JAMES
SCHAEFER, THOMAS
WAPPEL, GEROLDINE
WILLIAMS, THOMAS
ZOLLNER, MAURICE

LABORATORY
WALTER
GRESHAM,
Chief Chemist

Administrative and Supervisory

ARCYNSEI, WILBERT
ARMSTRONG, DALLAS
BANDHORN, MARGARET
BURNER, TIMOTHY
BOYFINGER, DEAN
BRAND, PATRICIA
BRIGGS, MELVIN
CAMPBELL, HARRY
CARAWAY, BILL
CUMMINGS, IRVING
DOIRON, ROGER
EATLEY, IRVING
ELIAS, WILMA
EROS, DONALD
EUGER, DAVE
FINSON, HARRY
FRANCIS, JAMES
GOEDIGER, JAMES
GREGORY, RON
HALL, JACK
HARRIS, CAROL
HERRON, IVADENE
HICKS, ORVILLE
HITCHER, LINDS
HORTON, RICHARD
JOHNSON, DAVID
KARNES, LARRY
KEITH, GENEVA
KELTERMAN, HAROLD
KLUSS, LEAH
KLOESS, RUSSEL
KOHLE, SUE
KRIS, RON
KUSTER, RONALD
LANDGRAF, FLO
LAUN, GEORGE
LAYTON, EDWIN
LUBRA, HILLEN

LEE, FRANK
LINGER, ROY
MCMALEY, CHARLES
MCLENNAN, MARVIN
MCINTIRE, DOBIE
MCINTIRE, ROBERT
MANGER, DIANE
MARSHALL, VIRGINIA
MARTIN, LEROY
MARTIN, ROBERT
MOON, ROBERT
NEUMANN, FRED
NITZSLER, LEE
PILGRIM, JOE
RICHARDSON, EUGENE
SCHMIDT, ESTHER
SCHNEIDER, BARBARA
SCHUBERT, ROBERT
SCHUETZ, THOMAS
SCHWARZBAUM, GEORGE
SCOTT, JEAN
SEMS, LARRY
SMITH, VALLIE
STODOLLE, DOBIE
STODOLLE, RONALD
VERGEN, ROBERT
WATKINS, JOSEPH
WEBB, MELVIN
WHITE, FRANCES
WHITE, RUDY
WILLIAMS, LARRY
WILLIAMS, LARRY
WILMORE, JAMES

Posters

HARRIS, CURTIS
KAY, ALLEN

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Violinists Group
 ALDER, ROBERT
 BARBER, HERT
 BARTON, PAUL
 BERNARD, DON
 ECKMAN, DONALD
 EYEN, EARL
 GARDNER, DAVID
 HENSLER
 HERSH, LENN
 HUTTON, LENN
 KISTENMAN
 LEVADAN
 LEE, JAMES
 MARLE, ERIC
 MARLE, JOSEPH
 MILES, ROBERT
 MILES, RAYMOND
 MONTAG, EDGAR
 MORGAN, FORT
 NICHOLS
 PETERSON
 TAJAN, JOSEPH
 THURCH, BENZOW
 SCHNE, ALVIN
 ROBERT
 TALL, JAMES
 TOLLEY, CLAUDE
 TOLLEY, JAMES
 TOLLEY, EUGENE
 TOLLEY, IVAN
 TOLLEY, ARNOLD
 TOLLEY, NORMAN
 TOLLEY, WILLIAM

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CONCLUSIONS

Summary

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Supervisory

Summary

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ANALYSIS

111.FINSON

AMIN, WILLIAM

...for

FOR THE JURY:

SHIVJI - JAVITS

SYNOPSIS

of: AMJ, (JJA)

QUALITY

Repair Jack

KEYWORDS:

From: MONSANTO CHEMICAL COMPANY
Public Relations Department

At: St. Louis

cc: H. A. Marple - 2
D. J. Forrestal - 2
J. E. McKee - 2
A. E. Settle - 2

April 10, 1957

To: F. S. Bonham, Addyston	R. L. Van Zandt, Luling
D. B. Hosmer, Anniston	L. L. Herring, Magnolia
D. Danna, Avon	R. R. Rumer, Monsanto, Idaho
W. J. Colvin, Camden	J. Cresce, Monsanto, Ill.
E. N. Hetzel, Carondelet	J. L. Whiteside, Monsanto, Tenn.
E. W. Gluesenkamp, Dayton	R. E. Soden, Nitro
E. C. McCarthy, Mound Laboratory	R. L. Miller, St. Louis
A. M. Sprague, El Dorado Chem. Plt.	D. M. Williamson, Santa Clara
W. M. Carney, El Dorado Refinery	W. S. Munro, Seattle
R. J. Kozacka, Everett	L. B. Crosby, Springfield
J. M. Depp, Kearny	J. S. Putnam, Texas City
H. G. Schleicher, Long Beach	H. O. Tittel, Trenton

Subject: PLANT HISTORIES

We have a request to make of you -- for material which will be of great help to this department in its public relations efforts for your plant and division and for the company as a whole; and it is our sincere hope you will be able to help us gather the information we need.

What we are hopeful of establishing is a GOOD historical file on each of our plants. Often community publications and events require this type of information; product publicity can be made more interesting with inserts of plant background; Monsanto officials and department heads often have need of specific plant information. And nowhere that we know of is the information readily available. During the past week we have received requests from a member of the EOP and from a general manager for a history of one of the plants -- and we have only fragments.

In the course of the next few weeks could you have someone in your organization gather the pertinent information on your plant and forward it to us? You need not have the material written up in final form; we can use separate paragraphs and listings. We will plan to prepare copy on your plant from the material submitted and will send a draft for your clearance. We could furnish you multiple copies of the final sketch for your own use, if you wish.

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Attached is a list of topics we could like to see covered; and if there are any other happenings you deem of sufficient importance, please have them included. We rely on your good judgement as to the depth of information needed to give a GOOD picture of your plant's history, knowing that you will see the wisdom of having pertinent information available for important inquiries.

We would appreciate your comments and, if possible, some indication of when it will be possible for you to let us have the historical information on your plant.

Charlotte Perabo

Charlotte Perabo

/jb
attachment

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LIST OF TOPICS FOR PLANT HISTORIES:

Historical highlights of the community in which the plant is located.

Place of the plant in the community; if applicable, why the community was chosen as the plant site.

Ownership record of the plant.

In general, chronological history of products made at the plant.

Chronological history of important physical expansions of the plant.

Personnel who have managed the plant; any interesting highlights of their tenure; number of employees from year to year.

Where, in general, plant products go and the types of end products they serve.

Any interesting "firsts" about the plant (products, processes, equipment design, management procedures, safety records, employee benefits, etc.)

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

100-200-500

From MONSANTO CHEMICAL COMPANY

cc

At Monsanto, Illinois

Date April 30, 1957

To Miss Charlotte Perabo Reference

At Main Office

Subject W. G. KRUMMRICH PLANT HISTORY

Attached is a history of the W.G. Krummrich Plant history requested in your memo of April 10.

We have attempted to cover all significant happenings in as brief a manner as possible.

We will be glad to furnish additional information on request.


J. Cresce

pe

From MONSANTO CHEMICAL COMPANY
At Monsanto, Illinois

CC

Date April 30, 1957

To Miss Charlotte Perabo Reference

At Main Office

Subject W. G. KRUMMRICH PLANT HISTORY

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

PLANT HISTORY

(195-1 Name Change) May, 1957

Wm. G. Krummrich Plant

Organic Chemicals Division

formerly "B" Plant, Monsanto, Ill. Plant 1917-1951

The William G. Krummrich Plant is located in the village of Monsanto, Ill., approximately two miles south of East St. Louis. Total plant property consists of 250 acres, [including 16 acres leased from the Chemical Warfare Service,] and 138 acres of unoccupied land situated outside of the main plant fence. Several other major plants are located in the village of Monsanto, including a Socony-Mobil Oil Company refinery, the American Zinc Company electrolytic plant, Lewin-Mathes Metal Company, Sterling Steel Casting Company, Darling Fertilizer Company, a plant and headquarters of the Midwest Rubber Reclaiming Company and the Cahokia Power Plant of the Union Electric Company of Missouri.

East St. Louis got its start primarily as a railroad and packing house center; but over the years, heavy industry has located in the area. East St. Louis has had a history of craft unionism, strikes as a result of union organization and conflict with the operating management of companies, racial violence, hoodlums engaged in labor relations or affecting labor relations, and in some cases, a poor labor relations attitude on the part of industry management. Today, the city has a population of approximately 100,000. The majority of plants in the area are absentee owned. Slow, steady progress has been made in the field of management, labor and community relations in the last decade; and the community is gradually losing much of its former unsavory reputation.

The village of Monsanto was incorporated in 1926 at a time when annexation of the area by the city of East St. Louis appeared imminent. The village occupies 1.65 square miles and has a population of 400. Many village residents work at one of the plants in the area. On the basis of per capita assessed valuation, the village is one of the wealthiest in the United States.

The Krummrich plant is well located from the standpoint of physical resources. It is approximately one mile from the Mississippi River and barges are used to transport certain raw materials and finished products. A river barge terminal is currently being constructed on plant property at the river front to derive further economic gains offered by barge transportation. Two railroads serve the plant: the Alton and Southern Railroad from the south side; the Terminal Railroad Association from the north side. Tracks run through the plant from north to south, connecting with both railroad lines. The west side of the plant is adjacent to a four-lane section of Illinois Highway #3 affording good access and egress for truck transportation.

The Krummrich plant had its beginning in 1907 when the Commercial Acid Company acquired the land and built a chamber sulfuric acid plant, a muriatic acid plant, and a nitric acid plant. The same year, the Sandoval Zinc Company built a unit for the manufacture of zinc chloride adjacent to the acid plants. In 1915 the Commercial

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Acid Company purchased the zinc chloride plant from Sandoval. With the entry of the United States into World War I, the business of the Commercial Acid Company increased. The plant prospered despite the fact that many additions to the plant were made by rule of thumb, i.e. a continuous succession of tearing down equipment which would not work properly and adding new equipment that also would not function as hoped. About this time, Monsanto was using many of the products produced by the Commercial Acid Company and saw the need for its own manufacture of these products to assure an adequate supply for internal consumption and future expansion. Monsanto purchased the Commercial Acid Company on November 1, 1917. At that time, the plant was producing phenol, salt cake, nitric cake and chlorosulfonic acid, in addition to sulfuric acid, muriatic acid, nitric acid and zinc chloride. The total plant employment in 1917 was 310.

CHRONOLOGICAL HISTORY OF PRODUCTS MANUFACTURED AT KRUMMRICH PLANT

<u>Year</u>	<u>Product</u>
1907	- Started production of sulfuric acid, muriatic acid, nitric acid and zinc chloride.
1916	- Started commercial production of chlorosulfonic acid, phenol and salt cake.
1925	- Started production of chlorine and caustic.
1926	- Started production of chlorobenzols, p-nitroaniline and catalyst for contact sulfuric acid plants.
1930	- Started production of nitrated organic chemicals.
1931	- Started production of chlorophenols.
1935	- Benzyl chloride manufacture started.
1935	- Started production of Aroclors, hydrogenated products and phosphorus halides.
1938	- Started production of phosphoric acid.
1947	- Started production of 2,4-D, DDT and Santolubes in leased Chemical Warfare Service Plant. Started production of Santomerse #1 and alkylbenzene.

Krummrich Plant History - 3

- 1950 - Started manufacture of potassium phenyl acetate.
- 1951 - Started production of monochloroacetic acid.
- 1954 - Started production of tricresyl phosphate and interim production of adipic acid.
- 1955 - Started production of phosphorus Pentasulfide.
- 1956 - Started production of Santolube 393 and fatty acid chloride.

CHRONOLOGICAL HISTORY OF IMPORTANT PHYSICAL EXPANSIONS OF PLANT

- 1907 - Constructed a four-chamber sulfuric acid department.

Constructed a four-furnace muriatic acid department.

Constructed four retort nitric acid department.

Constructed zinc chloride department.

Constructed powerhouse consisting of two 40 H.P. fire tube boilers.
- 1911 - Added wedge furnace to sulfuric acid plant to permit manufacture of pyrate instead of sulfur. Added concentrator to convert 60° BE acid produced to chambers to 66° BE acid.
- 1912 - Disastrous fire on January 8; destroyed sulfuric acid chambers, sulfuric acid concentrator, and most of muriatic acid department. Units rebuilt and expanded.
- 1915 - Nitric acid plant destroyed by fire.
- 1916 - Constructed two units to manufacture sulfuric acid by the contact process. Constructed enlarged nitric acid plant. Constructed chlorosulfonic acid department and a phenol plant.

Krummrich Plant History - 4

- 1917 - Constructed new power house consisting of four boilers having a capacity of 1260 H.P.
- 1918 - Constructed third chamber unit for production of sulfuric acid.
- 1922 - Constructed chlorine plant, and new power plant on the site of the present power plant. Due to economic conditions, the chlorine plant was not placed in operation until 1925. Power plant consisted of 4-600 H.P. water tube Edgemoor boilers.
- 1925 - Constructed plant for production of chlorobenzols. Constructed plant for production of p-nitroaniline.
- 1930 - Constructed plant for production of nitrated compounds in old powerhouse, Bldg. BL.
- 1931 - Built plant for the production of chlorophenol. Increased the capacity of the phenol plant.
- 1935 - Constructed Diamond chlorine cell house.
- 1936 - Constructed facilities for the production of Aroclors, pyranols, phosphorus trichloride, phosphorus oxychloride, and hydrogenated products. Two 100,000#/hr. high pressure boilers added to powerhouse.
- 1937 - Expanded chlorobenzol production facilities.
- 1938 - Constructed horizontal burning unit for the production of phosphoric acid. Constructed department for the production of tetra sodium pyrophosphate.
- 1940 - Added one 100,000#/hr. high pressure boiler.
- 1941 - Expanded chlorine production facilities by adding Hooker cell house. Chemical Warfare Service plant constructed in North Area.
- 1942-44 - Phenol Department expanded by 66 per cent.

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ATTORNEY CLIENT PRIVILEGE

Krummrich Plant History - 5

- 1946 - Expanded chlorine production facilities. Installed larger capacity Hooker cells and double effect caustic evaporators.
- 1947 - Constructed plant for the production of Santomerse and alkylbenzene. Two additional 100,000#/hr. high pressure boilers added.
- 1951 - Installed equipment for the production of monochloroacetic acid.
- 1953 - Added 200,000#/hr. steam boiler and new feed water treatment facilities.
- 1954 - Expanded alkylbenzene department. Expanded phosphoric acid production by construction of #3 burning unit. Expanded phosphorus trichloride and oxychloride production capacity. Expanded sulfuric acid facilities by the addition of a 400 T/day contact unit. Started construction of the phosphorus Pentasulfide plant. Expanded oil additives department by 40 per cent.
- 1955 - Constructed central HCl recovery plant.
- 1956 - Constructed units for the production of fatty acid chloride and Santolube 393.

HISTORY OF PLANT MANAGERS

<u>Dates</u>	<u>Plant Manager</u>
1917-1930	Dr. L. F. Nickell
1930-1936	Mr. F. B. Langreck
1936-1941	Mr. D. D. Dinsmoor
1941-1943	Mr. W. G. Krummrich
1943-1950	Mr. P. M. Tompkins
1950-1955	Mr. R. S. Wobus
1955-	Mr. J. Cresce

1959 - Sadeu ?

1966 - McChin ?

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ATTORNEY CLIENT PRIVILEGE

HIGH LIGHTS OF PLANT HISTORY, OTHER THAN EXPANSIONS AND NEW PRODUCTS

- 1937 - Voluntary recognition granted to A.F.L. Union at plant, and first contract signed.
- 1941 - First strike in plant history. Strike essentially jurisdictional in nature over attempts of mechanical craftsmen to obtain better wages than rest of men in plant.
- 1951 - Plant named for W. G. Krummrich. Previously the plant had been known as Plant "B".
- 1956 - Plant broke previous all-time safety record on December 19, by working 2,580,461 hours without a lost-time accident.

PLANT EMPLOYMENT DATA

<u>Year</u>	<u>Number of Employees</u>
1917	310
1928	340
1938	731
1940	1000
1941	1188
1942	1667
1943	1628
1945	1447
1946	1568
1947	1598
1948	1981
1949	2027
1951	2100
1952	2352
1953	2160
1954	2073
1955	1902
1956	1929
1957	1907

Over 100 chemicals are produced at the Krummrich plant. The plant is primarily a producer of heavy and intermediate chemicals, many of which serve as raw materials for other operations in the Krummrich plant or other Monsanto plants. On the basis of the dollar value of manufacturing machinery and equipment, the Inorganic Chemicals Division owns approximately 38 per cent of the plant.

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Principal Inorganic Chemicals Division products include:

- | | |
|-------------------------|---|
| Sulfuric Acid | - Basic heavy chemical. Used in steel mills, oil refineries, tanneries. Used to manufacture fertilizer and phenol. |
| Phosphoric Acid | - A basic chemical used to manufacture fertilizer and food grade phosphates. Significant portion of plant's production is sold to the Carondelet plant for manufacture of various phosphates. |
| Alkylbenzene | - Used primarily for the manufacture of synthetic detergents. |
| Phosphorus Oxychloride | - Used to manufacture the various phosphate esters which are used as plasticizers and gasoline additives. |
| Phosphorus Pentasulfide | - Used internally in Monsanto to manufacture oil additives and insecticides. Sold externally to manufacture oil additives. |
| Vanadium Catalyst | - Catalyst for contact sulfuric acid plants. |

Principal Organic Division products include:

- | | |
|--------------------------------|--|
| Nitrochlorobenzene | - Used within plant to produce p-nitroaniline and p-nitrophenol. Significant portion of production sold to Queeny plant. |
| Phenol | - Basic organic building block chemical. Significant portion of plant output used by Plastics Division to produce phenolic resins. |
| Santosite (Sodium Sulfite) | - By-product from the phenol process. Used in paper manufacture and as a reducing agent to remove oxygen from boiler feed water. |
| Salt Cake (Sodium Sulfate) | - By-product from the phenol process primarily used to manufacture glass. |
| Chlorine, Caustic and Hydrogen | - All plant production used within plant to produce other chemicals. |

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Krummrich Plant History - 8

Chlorobenzols	- Used as building blocks within plant to produce other intermediates. p-Dichlorobenzene (Santochlor) used as a mothicide and larvacide.
Pentachlorophenol	- Used to protect wood against rot and termites.
Benzyl Chloride	- Used as a building block within company to produce plasticizers, resins, pharmaceuticals and dyestuffs.
Aroclors	- Used as plasticizers, and dielectrics for condensers, capacitors and transformers. Used as a heat transfer medium, high temperature lubricants and hydraulic fluids.
Tricresyl Phosphate (G-Grade)	- Used as a gasoline additive.
Cyclohexylamine	- Used to manufacture corrosion inhibitors and dyestuffs.
p-Nitrophenol	- Used to manufacture insecticides.
Santolubes	- Plant produces a complete line of sulfonated detergent type oil additives.
2,4-D	- Used as a herbicide.

May, 1957

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

From

MONSANTO CHEMICAL COMPANY

At Queeny Plant - St. Louis

cc Messrs.

H. A. Marple

D. J. Forrestal

R. L. Miller

Date April 24, 1957

To Ms. Charlotte Perabo 2 Reference Your memo of 4/10/57

At Main Office Subject PLANT HISTORIES

I was requested by Mr. R. L. Miller to answer your memorandum, asking to submit some information about the Queeny Plant so that your department may have a good historical file on each of the Monsanto plants. I have endeavored to answer it according to the list of topics which you submitted.

Since you mentioned the fact that the material did not need to be written up in a final form, I have not exerted too much effort in its preparation.

I hope, however, that it is the type of information you desire and please feel free to call on me should you desire any additional data.


J. H. Kern

jrm
Enc.

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4/24/57

PLANT HISTORIES

I. HISTORICAL HIGHLIGHTS OF THE COMMUNITY IN WHICH THE PLANT IS LOCATED

Queeny
The History of the John F. Queeny Plant is very much the History of Monsanto. It was the first plant of Monsanto, the company which was founded in 1901 on a \$5,000 investment by John F. Queeny, a drug salesman for Meyer Brothers Drug Co., in St. Louis, the city which is a natural center of the vast fertile territory of the southwest.

St. Louis was founded in 1763 by Pierre Laclede and Antoine Maxent and a few other Frenchmen who, living under Spanish sovereignty, stood high with French authority in New Orleans. These Republican Frenchmen were ready in March 1804 for the peaceful transfer of authority in St. Louis to the United States.

In 1901 when the Queeny Plant was established, St. Louis was the fourth largest city in population and probably had the most mature culture of any ~~other~~ American city west of New York. This was the year when G. P. Dorris and John L. French of the St. Louis Motor Carriage Company turned out 65 automobiles selling for \$1,200 each. This was also the year when college football was becoming a big game in St. Louis and the first ladies of the Twentieth Century, though still tightly corseted and lavishly gowned, were beginning to assert that the women's place was not necessarily in the home.

II. PLACE OF THE PLANT IN THE COMMUNITY

The Queeny Plant is one of the largest plants of St. Louis in the number of people it employs. Its employees always have been among the leaders in answering civic calls and taking part in civic programs such as the Community Chest, Red Cross, Blood Bank, etc. A large percentage of its employees are members of school boards and are active in church organizations, boy scouts, junior achievement, etc.

III. OWNERSHIP RECORD OF THE PLANT

Information not available.

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ATTORNEY CLIENT PRIVILEGE

IV. CHRONOLOGICAL HISTORY OF PRODUCTS MADE AT THE PLANT

1902	Saccharin	1934	Benzoic Acid
1904	Vanillin	1934	Glycolate Plasticizer
1904	Caffeine (from tea)	1934	Diethyl Phthalate
1906	Phenacetin	1935	P-Nitroanisole
1908	Chloral Hydrate	1935	P-Anisidine
1909	Phenolphthalein	1935	Santopour
1911	Glycerophosphates	1936	Phthalyl Chloride
1914	Coumarin	1937	Sulfanilamides
1915	Nitrochlorobenzene	1939	Butyl Laurate
1915	Acetanilid	1940	Diphenyl Phthalate
1916	Phenol	1941	Benzene Sulfonyl Chloride
1917	Aspirin	1944	Santolube 394-C
1917	Salicylic Acid	1944	D-Aminobiphenyl
1917	Chlorbenzol	1944	P-Aminobiphenyl
1917	Methyl Salicylate	1944	DDT
1918	Phthalic Anhydride	1945	Benzyl Benzoate
1918	Chloramine-T	1946	Synthetic Caffeine
1919	Dichloramine-T	1947	Maleic Anhydride
1919	Chlortoluolsulfonate	1949	Santicizer 107
1922	Anthranilic Acid	1950	Santicizer 140, Skydrol
1925	Monochloroacetic Acid	1952	Benthal
1927	Guaicol	1953	Fumaric Acid
1932	Aniline	1954	Aspirin (New Process)
1934	Santicizer 9	1955	Bisphenol A

V. CHRONOLOGICAL HISTORY OF IMPORTANT PHYSICAL EXPANSIONS OF THE PLANT

From the small building located at what was then Second and Lafayette and is now Second and Soulard, the tentacular Queeny Plant expanded and absorbed many of the surrounding factories and blocks of old tenement buildings which were replaced by modern manufacturing buildings, neat parking lots, and grassy plots.

Other factories which were purchased were the following:

1910	Diamond Match Company	1939	Grand Packing Company
1928	St. Louis Architectural Iron Co.	1942	F. E. Schoenberg Mfg. Company
1933	American Cone & Pretzel Company	1945	Alt Box Company
1937	Cotto-Waxo Company	1949	Nat'l. Distillers Products Co.
1937	Staudte & Rueckoldt Manufacturing Co.	1953	American Car and Foundry Company

VI. PERSONNEL WHO HAVE MANAGED THE PLANT; AND INTERESTING HIGHLIGHTS OF THEIR TENURE; NUMBER OF EMPLOYEES FROM YEAR TO YEAR

The plant managers who, in the early years were known as general superintendents, have been as different in character and temperament as the products this plant manufactured, from a highly impulsive Louis Veillon to the extremely phlegmatic "bon vivant" Ed DePree.

The personnel who have managed the Queeny Plant are listed in chronological order.

1902-1919	Dr. L. Veillon	Ph.D. FEDERAL POLYTECHNICUM Zurich, Switzerland
1919-1930	H. O. McDonough	B.S., Chemical Engineering WASHINGTON & JEFFERSON COL. Washington, Pennsylvania
1930-1943	E. J. DePree	B.S., Chem. Eng. (1915) UNIVERSITY OF MICHIGAN Ann Arbor, Michigan
1943-1946	P. G. Marsh	B.S., Chem. Eng. (1920) WASHINGTON UNIVERSITY St. Louis, Missouri
1946-1953	A. J. Pastene	B.S., Chem. Eng. (1914) MASS. INST. OF TECH. Cambridge, Massachusetts
1953-1955	Dr. J. R. Durland	B.S., Chem. Eng. (1935) MICHIGAN TECH. Houghton, Michigan Ph.D., Organic Chemistry (1939) UNIVERSITY OF WISCONSIN Madison, Wisconsin
1955-1957	H. L. Minckler	B.S., Chemistry (1939) UNIVERSITY OF VERMONT Burlington, Vermont M.S., Organic Chem. (1941) UNIVERSITY OF NEW HAMPSHIRE Durham, New Hampshire
1957-	R. L. Miller	B.S., Chem. Eng. (1936) IOWA STATE COLLEGE Ames, Iowa

Information on the number of employees is not available for each year since 1901. The following, however, are from actual records in my possession:

1901-1915	20-90	1939	967
1915	92	1940	1023
1916	165	1941	1255
1917	288	1942	1346
1918	527	1943	1428
1919	647	1944	1443
1920	762	1945	1748
1921	517 {depression}	1946	1809
1922	270 { " }	1947	2149
1923-1928	300-500	1948	2161
1929	562	1949	1838
1930	406 {recession}	1950	2123
1931	385 { " }	1951	2204
1932	428 { " }	1952	2160
1933	586	1953	2068
1934	698	1954	1853
1935	750	1955	1960
1936	847	1956	1893
1937	855	1957	1914
1938	799		

VII. WHERE, IN GENERAL, PLANT PRODUCTS GO AND THE TYPES OF END PRODUCTS THEY SERVE

The information submitted below is organized according to the product groupings which the John F. Queeny Plant uses in their routine reports.

Resin Materials and Plasticizers

The end use of these products is for automotive enamels, other enamels, paint, varnishes and plastic products of all descriptions. Also, various rubber compounds, dye paper, sizing, mitacides and fungicides.

Intermediates

The end use of these products is in perfumes, paints, dyes, pharmaceuticals, rubber anti oxidants and accelerators. Disinfectants, photograph chemicals, leathers and components of some plastics.

Petroleum Chemicals

Additives for petroleum oils and greases and gasoline.

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Functional Fluids

Fire resistant hydraulic fluids for dye casting machines and hydroelectric turbines. Fire resistant hydraulic fluids for aircraft use.

Fine Chemicals

Various medicinal and pharmaceuticals, skin degerming agents, perfumes, flavors and condiments for various food products, antihistamine preparations, animal food additives, and preservatives.

Agricultural Chemicals

Various specialized weed and brush killers.

Heavy Chemicals

Leather tanning.

VIII. ANY INTERESTING "FIRSTS" ABOUT THE PLANT (PRODUCTS, PROCEDURES, EQUIPMENT DESIGN, MANAGEMENT PROCEDURES, SAFETY RECORDS, EMPLOYEE BENEFITS, ETC.)

The Queeny Plant was the first plant of Monsanto to establish a safety record of over four million man hours without a lost-time accident. This record was established during the period of June 14, 1950 through June 11, 1951 when the plant operated 4,393,030 man hours without a lost-time accident. This record was beaten by the Nitro Plant in 1953 when this plant accumulated 5,373,400 hours accident-free. The Queeny Plant had beaten its 1951 record in 1954 when it operated 422 days without a lost-time accident with 4,832,684 hours of exposure.

The Queeny Plant was one of the first plants in the City Of St. Louis to obtain the following benefits:

Vacations with pay to hourly paid employees in 1932 when these employees were granted one week vacation with pay. This paid vacation was increased to two weeks in 1937.

Establish a dismissal wage policy during the depression years of the early 1930's.

Reduce working hours from nine to eight per day in 1930 and from 44 to 40 hours in 1932.


J. H. Kernan

jr
4/24/57

Copies sent to - Ms. C. Perabo (2)
Mr. H. A. Marple
Mr. D. J. Forrestal
Mr. R. L. Miller

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ATTORNEY CLIENT PRIVILEGE

From **MONSANTO CHEMICAL COMPANY**

At St. Louis, Mo.

Date May 8, 1957

ccMessrs:

R. L. Miller -Queeny Pl

H. A. Marple -2

D. J. Forrestal -2

J. E. McKee -2

To Mr. Jules H. Kernan Reference

At Queeny Plant Subject

*Min Perabo:
Very good +
thanks for letting
me see it.
J.E.M.*

Dear Mr. Kernan:

Would you mind looking over the attached version of the Queeny Plant history and giving it your blessing or telling us where we have gone wrong.

Largely what we have done is to take out the headings, and I believe we have added a fact or two in the first paragraphs.

With your permission, this is the form we would use for multiple copies for general use.

Many, many thanks for all the effort you have put into providing us with this history -- I'm sure we are going to find it valuable on many occasions.

Charlotte Perabo
Charlotte Perabo

/ec
Attachment

*Jan
Ok for multiple
copies
5/10.*

*Stella:
single space*

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PLANT HISTORY

John F. Queeny Plant

Organic Chemicals Division

The history of the John F. Queeny Plant at 1700 S. Second St., St. Louis, Mo., for a number of years was the history of Monsanto Chemical Company. The original name of the company, Monsanto Chemical Works, which was changed in 1933, is cut into the concrete molding on one of the older buildings at the plant site. Plant "A", as it was known prior to 1943, was the first plant of the company founded in 1901 by John F. Queeny, a purchasing agent for Meyer Brothers Drug Co.

St. Louis is an old city in the heart of America, a proud city which contributed much to the settlement of the west. Founded in 1764 by Pierre Laclede Liguist, its early commercial activities centered around the rich and picturesque fur trade. Prior to 1803, when it was acquired by the United States under the Louisiana Purchase, the city had lived under Spanish and French flags.

In 1901 when the Queeny Plant was established, St. Louis was the fourth largest city of the nation in population and had probably the most mature culture of any American city west of New York. This was the year when G. P. Dorris and John L. French of the St. Louis Motor Carriage Company turned out 65 automobiles selling for \$1,200 each. This was also the year when college football was becoming a big game in St. Louis and the ladies of the Twentieth Century, though still tightly corseted and lavishly gowned, were beginning to assert that woman's place was not necessarily in the home.

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Today the city is at the crossroads of the United States. The city proper has a population of over 850,000; almost 2,000,000 people live in the metropolitan area that is one of the most diversified business centers of the nation.

The Queeny plant is one of the largest plants of St. Louis in the number of people it employs. Its employes always have been among the leaders in answering civic calls and taking part in civic programs such as the Community Chest, Red Cross, Blood Bank, etc. A large number of its personnel are members of school boards and are active in church organizations, boy scouts, Junior Achievement, etc.

Saccharin was the product which prompted John F. Queeny to establish Monsanto Chemical Company. During the first few years the young company struggled for existence in the face of German price cutting and governmental regulation. New products were soon added to bring in needed revenue and to serve the pharmaceutical and flavoring markets. The following list indicates by years the many products which have been added to Queeny plant manufacture:

1902	Saccharin	1934	Benzoic Acid
1904	Vanillin	1934	Glycollate Plasticizer
1904	Caffeine (from tea)	1934	Diethyl Phthalate
1906	Phanacetin	1935	P-Nitroanisole
1908	Chloral Hydrate	1935	P-Anisidine
1909	Phenolphthalein	1935	Santopour
1911	Glycerophosphates	1936	Phthalyl Chloride
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Other factories were purchased as follows:

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1930-1943	E. J. DePree	B.S., Chem. Eng. (1915) UNIVERSITY OF MICHIGAN Ann Arbor, Michigan
1943-1946	P. G. Marsh	B.S., Chem. Eng. (1920) WASHINGTON UNIVERSITY St. Louis, Missouri
1946-1953	A. J. Pastene	B.S., Chem. Eng. (1914) MASS. INST. OF TECH. Cambridge, Massachusetts

EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

John F. Queeny Plant History - 4

1953-1955	Dr. J. R. Durland	B.S. Chem. Eng. (1935) MICHIGAN TECH. Houghton, Michigan
		Ph.D., Organic Chemistry (1939) UNIVERSITY OF WISCONSIN Madison, Wisconsin
1955-1957	H. L. Minckler	B.S., Chemistry (1939) UNIVERSITY OF VERMONT Burlington, Vermont
		M.S., Organic Chemistry (1941) UNIVERSITY OF NEW HAMPSHIRE Durham, New Hampshire
1957 -	R. L. Miller	B.S., Chem. Eng. (1936) IOWA STATE COLLEGE Ames, Iowa

Information on the number of employees is not available for each year since 1901. However, a partial table is available from plant records:

1901-1915	20-90	1939	967
1915	92	1940	1023
1916	165	1941	1255
1917	288	1942	1346
1918	527	1943	1428
1919	647	1944	1443
1920	762	1945	1748
1921	517 {depression}	1946	1809
1922	270 { " }	1947	2149
1923-1928	300-500	1948	2161
1929	562	1949	1838
1930	406 {recession}	1950	2123
1931	385 { " }	1951	2204
1932	428 { " }	1952	2160
1933	586	1953	2068
1934	698	1954	1853
1935	750	1955	1960
1936	847	1956	1893
1937	855	1957	1914
1938	799		

EPA / CERRO COPPER / EIL / PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

The information submitted below is organized according to the product groupings which the John F. Queeny Plant uses in ^{its} ~~their~~ routine reports.

Products now manufactured at the Queeny plant may be classified by product groups, as follows:

Resin Materials and Plasticizers contribute to automotive enamels, other enamels, paint, varnishes and plastic products of all descriptions, also various rubber compounds, dye paper, sizing, mitacides and fungicides.

Intermediates are used in perfumes, paints, dyes, pharmaceuticals, rubber anti oxidants and accelerators, disinfectants, photograph chemicals, leathers and components of some plastics.

Petroleum Chemicals are additives for petroleum oils and greases and gasoline.

Functional Fluids are effective fire resistant hydraulic fluids for dye casting machines, hydroelectric turbines and aircraft.

Fine Chemicals are various medicinal and pharmaceutical products, skin degerming agents, perfumes, flavors and condiments for various food products, antihistamine preparations, animal food additives, and preservatives.

Agricultural Chemicals are a variety of products used as specialized weed and brush killers.

Heavy Chemicals find use in such other manufacturing processes such as leather tanning.

EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Queeney Plant History - 6

The Queeney plant was the first plant of Monsanto to establish a safety record of over four million man-hours without a lost-time accident. This record was established during the period June 14, 1950, through June 11, 1951, when the plant operated 4,393,030 man-hours without a lost-time accident. The record held until 1953 when the Nitro, W. Va., plant accumulated 5,373,400 accident-free hours. The Queeney plant beat its 1951 record in 1954 when it operated 422 days without a lost-time accident with 4,832,684 hours of exposure.

The Queeney plant was one of the first plants in the City of St. Louis to obtain the following benefits:

Vacations with pay to hourly paid employees. (In 1932 hourly employees were granted one week vacation with pay; this paid vacation was increased to two weeks in 1937.)

Dismissal wages. (This policy was established during the depression years of the early 1930's.)

Reduced working hours. (Hours were cut from nine to eight per day in 1930 and from 44 to 40 hours per week in 1932.)

EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

PLANT HISTORY

John F. Queeny Plant

Organic Chemicals Division

The history of the John F. Queeny Plant at 1700 S. Second St., St. Louis, Mo., for a number of years was the history of Monsanto Chemical Company. The original name of the company, Monsanto Chemical Works, which was changed in 1933, is cut into the concrete molding on one of the older buildings at the plant site. Plant "A", as it was known prior to 1943, was the first plant of the company founded in 1901 by John F. Queeny, a purchasing agent for Meyer Brothers Drug Co.

St. Louis is an old city in the heart of America, a proud city which contributed much to the settlement of the west. Founded in 1764 by Pierre Laclede Ligest, its early commercial activities centered around the rich and picturesque fur trade. Prior to 1803, when it was acquired by the United States under the Louisiana Purchase, the city had lived under Spanish and French flags.

In 1901 when the Queeny Plant was established, St. Louis was the fourth largest city of the nation in population and had probably the most mature culture of any American city west of New York. This was the year when G. P. Dorris and John L. French of the St. Louis Motor Carriage Company turned out 65 automobiles selling for \$1,200 each. This was also the year when college football was becoming a big game in St. Louis and the ladies of the Twentieth Century, though still tightly corseted and lavishly gowned, were beginning to assert that woman's place was not necessarily in the home.

Today the city is at the crossroads of the United States. The city proper has a population of over 850,000; almost 2,000,000 people live in the metropolitan area that is one of the most diversified business centers of the nation.

The Queeny Plant is one of the largest plants of St. Louis in the number of people it employs. Its employees always have been among the leaders in answering civic calls and taking part in civic programs such as the Community Chest, Red Cross, Blood Bank, etc. A large number of its personnel are members of school boards and are active in church organizations, boy scouts, Junior Achievement, etc.

Saccharin was the product which prompted John F. Queeny to establish Monsanto Chemical Company. During the first few years the young company struggled for existence in the face of German price cutting and governmental regulation. New products were soon added to bring in needed revenue and to serve the pharmaceutical and flavoring markets. The following list indicates by years the many products which have been added to Queeny Plant manufacture:

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Queeny Plant History --2

1902	Saccharin	1934	Benzoic Acid
1904	Vanillin	1934	Glycollate Plasticizer
1904	Caffeine (from tea)	1934	Diethyl Phthalate
1906	Phanacetin	1935	P-Nitroanisole
1908	Chloral Hydrate	1935	P-Anisidine
1909	Phenolphthalein	1935	Santopour
1911	Glycerophosphates	1936	Phthalyl Chloride
1914	Coumarin	1937	Sulfanilamides
1915	Nitrochlorobenzene	1939	Butyl Laurate
1915	Acetanilid	1940	Diphenyl Phthalate
1916	Phenol	1941	Benzene Sulfonyl Chloride
1917	Aspirin	1944	Santolube 394-C
1917	Salicylic Acid	1944	D-Aminobiphenyl
1917	Chlorbenzol	1944	P-Aminobiphenyl
1917	Methyl Salicylate	1944	DDT
1918	Phthalic Anhydride	1945	Benzyl Benzoate
1918	Chloramine-T	1946	Synthetic Caffeine
1919	Dichloramine-T	1947	Maleic Anhydride
1919	Chlortoluolsulfonate	1949	Santicizer 107
1922	Anthranilic Acid	1950	Santicizer 140, Skydrol
1925	Monochloroacetic Acid	1952	Benthal
1927	Guaicol	1953	Fumaric Acid
1932	Aniline	1954	Aspirin (New Process)
1934	Santicizer 9	1955	Bisphenol A

From the small building located at what was then Second and Lafayette Streets and is now Second and Soulard, the tentacular Queeny Plant expanded and absorbed many of the surrounding factories and blocks of old tenement buildings which were replaced by modern manufacturing buildings, neat parking lots, and grassy plots.

Other factories were purchased as follows:

1910	Diamond Match Company	1939	Grand Packing Company
1928	St. Louis Architectural Iron Company	1942	F. E. Schoenberg Mfg. Company
1933	American Cone & Pretzel Company	1945	Alt Box Company
1937	Cotto-Waxo Company	1949	Nat'l. Distillers Products Company
1937	Staudte & Rueckoldt Mfg. Company	1953	American Car and Foundry Company

The plant managers, who in the early years were known as general superintendents, have been as different in character and temperament as the products this plant manufactured, from a highly impulsive Louis Veillon to the "bon vivant" Ed DePree.

EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Queeny Plant History -- 3

The personnel who have managed the Queeny Plant are listed in chronological order:

1902-1919	Dr. L. Veillon	Ph.D. FEDERAL POLYTECHNICUM Zurich, Switzerland
1919-1930	H. O. McDonough	B.S., Chemical Engineering WASHINGTON & JEFFERSON COLLEGE Washington, Pennsylvania
1930-1943	E. J. DePree	B.S., Chemical Engineering (1915) UNIVERSITY OF MICHIGAN Ann Arbor, Michigan
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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

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EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Queeny Plant History -- 5

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EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Lucy J. ...
Misc.
1946

PLANT A FINISHED PRODUCT CODE DESIGNATIONS

A-1-0	Ortho Toluenesulfonamid
B-1	Saccharin Soluble
C-1	Basic Chrome Sulfate
1	Saccharin Insoluble
A-2	Clove Oil
B-2	Vanillin (Clove)
C-2	Vanillin Improved (Guaiacol)
D-2	Ethavan
A-3	Caffeine Citrate
D-3	Methyl Chloride
3	Caffeine
B-4	Sodium Salicylate
C-4	Salicylic Acid U.S.P.
4	Salicylic Acid Technical
A-5-M	Meta Nitrochlorbenzol
A-5-O	Ortho Nitrochlorbenzol
A-5-P	Para Nitrochlorbenzol
B-5-O	Ortho Phenetidin
B-5-P	Para Phenetidin
21-P	Para Nitrophenol
C-5-O	Ortho Nitroanisole
C-5-P	Para Nitroanisole
D-5-O	Ortho Anisidine
D-5-P	Para Anisidine
5	Acetophenetidin
A-6	Glycerophosphates - Calcium
	Sodium
B-6	Glycerophosphates - Glycero Phosph ^{oric} Acid
	Iron
	Magnesium
	Manganese
	Potassium
A-7	Aspirin - Starch Granulation
B-7	Aspirgran
C-7-A	Sodium Acetate Anhydrous
C-7	Sodium Acetate
7	Aspirin Crystals and Powder
8	Chloral Hydrate
A-9	Phthalic Anhydride
B-9-A	Maleic Anhydride
9	Phenolphthalein
A-10	Santicizer 9
10	Santolites
A-11	Tricresyl Phosphate
B-11	Salicylaldehyde
D-11	Triphenyl Phosphate
11	Coumarin
A-12	Acetanilid Special Process
12	Acetanilid
A-14	Ethacol

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

14	Guaiacol
A-15	Para Toluene Sulfonchloride (1010)
A-15 Oil	Eutectic Oil
B-15	Benzene Sulfonchloride
C-15	Toluene Sulfonic Acid (94% Technical)
15	Santicizer 3
A-16-M	Meta Toluenesulfonamide
A-16-P	Para Toluenesulfonamide
B-16	Benzene Sulfonamide
C-16	Para Toluene Sulfonamide Semi-refined
A-17	Chloramine and Santamine
B-17	Dichloramine
C-17	Malazone
D-17	Chlorcosane
A-18	Sodium Benzoate
B-18	Ammonium Benzoate
C-18	Benzoic Acid Sublimed
18	Benzoic Acid Technical
A-20	Ethyl Salicylate
B-20	Salethyl Carbonate
20	Methyl Salicylate
22-M	Meta Chloraniline
22-O	Ortho Chloraniline
22-P	Para Chloraniline
22	Aniline Oil
A-23	Dimethyl Phthalate
B-23	Diethyl Phthalate
23	Dibutyl Phthalate
A-25	Santicizer M-17 (Methyl Phthalate-Ethyl Glycollate)
B-25	Santicizer B-16 (Butyl Phthalate-Butyl Glycollate)
C-25	Santicizer E-15 (Ethyl Phthalate-Ethyl Glycollate)
D-25	Ethyl Chloracetate
E-25	Butyl Chloracetate
26-O	Ortho Amino Diphenyl
26-P	Para Amino Diphenyl
A-27	Santopour
B-27	Tri Wax Phenol 3-16
C-27	Tri Wax Phenol 3-14
27	Santopour Concentrate (Tetra Wax Phenol Phthalate)
28	Triphenyl Phosphite
29	Dichloraniline
30	Theobromine Refined
A-31	Tributyl Phosphate
31	Triethyl Phosphate
32	Phthalyl Chloride (1500)
A-33	Santolite K-5
33	Santolite K
A-34	Para Acetanilid Sulfonamide
B-34	Para Acetyl Amino Benzene Sulfonchloride Refined
C-34	Para Acetanilid Sulfonchloride
34	Sulfanilamide (Para Amino Benzene Sulfonamide)

A-35	Santolube 303
B-35	Santolube 303-A
C-35	Santolube 570-X-4
35	Santolube 261
36	Butyl Laureate
37	Diphenyl Phthalate
A-38	Chloramine B
B-38	Dichloramine B
A-39	Senticizer 129
39	Santolite BH
41	2-Amino Thiazole
A-42	Acetyl Sulfathiazole
42	Sulfathiazole
43	Succinyl Sulfathiazole
44	Santolube 394-C
45	Santobane (Dichlor Diphenyl Trichlorethane)
46	Benzyl Benzoate
A-47	Santopour B
47	Santopour B Conc.

PLANT A BY-PRODUCT CODE DESIGNATIONS

1010	Para Toluene Sulfonchloride
1011	Zinc Oxide
1014	Ortho Vanillin
1022	Spent Cloves
1500	Phthalyl Chloride

MONSANTO - U. S. GOVERNMENT IN WORLD WAR II.

- 1939 September Monsanto Magazine for background
- March- C. Belnap, Ex. V-P, Monsanto's representative on Chemical Advisory Committee, Army-Navy War Munitions Board to estimate U. S. needs.
- 1940 June 9 Employees permitted 3-weeks training in National Guard with pay
- Aug. 28 Conscription policy by E. M. Q. (between G. B. #159-60)
- 1941 Oct. 3 E. M. Q. declines contract for smokeless powder plants (better suited to TNT) but offers phthalic anhydride, dibutyl phthalate, phenol, phosphorus, aniline, sulfuric and nitric acids now in production and could make methanol, formaldehyde and ammonia.
- Nov. 18 W. M. Rand approved as dollar-a-year man, Production Management
- Dec. 8 E. M. Q. message to employees
- C. Belnap E. M. Q. telegrams to Sec'y of War and other Government officials
- Dec. 31 First Navy "E" received
- 1939-42 \$23,500,000 invested in new equipment and construction useful to war effort. Government funds used only for four plants: 1) secret chemicals; 2) CWS plant (ahead of schedule and below cost); 3)munitions 4) synthetic rubber.
- Provided Navy Intelligence with sulfuric acid plant reports on Japan
- From 1941 on, war material plants worked around the clock and holidays
- " " " , Nitro plant used exclusively for rubber chemicals
- 1942 Jan. 29 First CWS \$200,000 plant, Monsanto, Ill., completed early and at less cost than estimate and turned over to Government (G. B. #162)
- May Prominent news correspondents toured Monsanto plants
- June 30 Dollar-a-year man policy memo
- Oct. Longhorn Ordnance plant operating
- Dec. 22 (St. L. P-D) Gen. McArthur sent Christmas message to employees of Monsanto Chemical Co.

In addition to the usual women in plants, art students were hired as engineers, draftsmen, other capacities where decisions were needed

Other highlights of 1942:

Monsanto Australia producing
Aid to WPB, OPA and NDRC
Theobromine and caffeine
Aviation gas work
Industrial salvage
Four dollar-a-year men

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Research devoted to war effort:

1941	32.5%
1942	53.9% (90% Org., 60% Pls, Merrimac, C. R., 40% Phos.)
1943	80%

1943 From February 5 Report for Renegotiation of War Contracts:

Seven plants producing
 80% for research
 Development work on 25 items
 Pooling patents
 Expansion of plants - manufacturing over 30 products
 Subcontracted some work
 Cooperated with other contractors
 Special risks - expansion money
 Material and other handicaps
 Refunds to CWS
 Five dollar-a-year men
 Special assignments
 Thomas, Hochwalt and Rand on Advisory Boards
 Submitted reports on chemical operations in Europe and sulfuric acid
 plants in Japan to Army-Navy Intelligence
 M-Australia - sulfanilamide, etc.
 M-Brazil formed to assure supply of theobromine
 March 10 - First shipment of styrene left Texas City Plant. Completed in 358
 days; 50,000 ton capacity; \$17,000,000 cost.

Dr. L. F. Nickell, MCL, brought from England for mutual U. S. -
 Monsanto advantage

9% of employees salary to War Bonds

Scrap drives

Cooperating with South America - "Coordination of American Affairs"

Cooperating with China Institute of America

New England Alcohol converted to grain alcohol process

Insect repellent

Saflex - waterproof raincoats

Vanillin - save space and weight

Ferrisul - prevent gun shell erosion

DDT

Vuepack - protect eyes

Motors for robot bombs

EPA/CERRO COPPER/EIL/PCB
 ATTORNEY WORK PRODUCT
 ATTORNEY CLIENT PRIVILEGE

Dec. 3 Award for synthetic rubber program

1944 March 27 W. M. Rand at Annual Stockholders Meeting: "Most of 335 items
 manufactured go to war effort."

Sept. 30 VE Day editorial in "Monsanto News"

1945 July 1 Assumed operation of Clinton Labs, Oak Ridge, Tennessee

Aug. 15 Letter of Commendation to E. M. Q. from Maj. Gen. Leslie Groves for
 work on atom bomb

Aug. 17 NDRC award to 188 employees of Central Research for work on rocket
 propellants

Dec. 31 NR: 850 vets reemployed; 941 non-Monsanto vets employed

(The above outline has been compiled from correspondence, reports, summaries and
 commendations in the archives. It may be incomplete.)

pc

3/14/67

HOW MUCH Chemistry PER SOLDIER?



METALS

Phosphoric acid for rustproofing.
Hydrofluoric and muretic acid for pickling.
Sulfuric acid for cleaning.
Ferric chloride for brass parts, buttons.

PLASTICS

Nitrocellulose for lacquers on metal parts and helmet liner.
Fiberglass for walkie-talkie case and dials, lenses in Polaroid goggles, gas mask parts and eyepieces. Lustron for walkie-talkie insulation and sockets.
Resin resins for helmet liner and stopper of canteen. Seflex for water resistant raincoat or poncho.
Nylon for shoe lace tips.

AMMUNITION

Nitric acid, aniline oil, dibutyl phthalate, alcohol, mixed acid for powder and explosives. Ferric chloride for pickling brass cartridge cases.

RUBBER

Accelerators, antioxidants, softeners, tackifiers for shoe heels and soles, wire insulation, gas mask, elastic, adhesive bandages, sponge cushions in walkie-talkie.

TEXTILES

Tetrasodium pyrophosphate and trisodium phosphate for processing cotton before dyeing. Mercier and sodium bisulfite for bleaching.
Acetic acid, Glauber's salt, sodium acetate, pentachlorophenol, dinitrochlorobenzene, dinitroaniline, Santomerse, for dyes.
Aluminum chloride and sulfuric acid for carbonizing woolen cloth.
Ammonium aqua for neutralizing wool after carbonizing.

LEATHER

Santofen-KR, Merlanol, sodium bisulfite, sulfuric acid, sodium polysulfide, and sodium sulfide for tanning and bleaching. Santobrite for control of microbiological activity in leather.

MISCELLANEOUS

Santovar and Santocel for paint on helmet, eyepieces, hooks, canteen and for first aid tape and gas mask.
Sulfanilamide for first aid kit.
Coumarin, vanillin, Ethyl vanillin, calcium phosphate and sodium ferric pyrophosphate for field rations. Dopes for cables.
Chlorine and aluminum sulfate for purification of water in canteen.

1916—Hossenfelter, German consul general in New York, in a letter to von Bethmann-Hollweg, German chancellor, predicted American defeat in World War I because of our dependence then on Germany's chemical industry. "Americans can never establish such an industry," Hossenfelter wrote. "They have the resources but they lack the necessary science and technology. And, besides, the conflicting selfishness of American business renders it impossible."

1943—You see on this page a *partial* list of "made in America" Monsanto Chemicals used to help outfit the American fighting man in World War II. (This list does not include many chemicals used in winter equipment, nor those used in outfitting other branches of the service, nor any of the many chemicals classified as military secrets.) The American spirit of free competitive enterprise, which a totalitarian mind misinterpreted as "conflicting selfishness," has built a chemical industry that was ready not only to help win this war but is ready for the tomorrow when it will help build a greater peacetime future for free men everywhere.

MONSANTO CHEMICAL COMPANY, St. Louis

MONSANTO
CHEMICALS AND PLASTICS



SERVING INDUSTRY... WHICH SERVES MANKIND

EPA / CERRO COPPER / EIL / PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

MANAGEMENT PERSONNEL DURING W. W. II.

In addition to the officers and directors, the records show the following division and plant managers:

Merrimac Division	W. M. Rand (1943: D. S. Dinsmoor), Mgr.
Organic Division	J. A. Berninghaus (Nov., 1943: O. Bezanson), Mgr.
Phosphate Division	R. R. Cole, Mgr.
Plastics Division	J. C. Brooks (1944: F. Williams), Mgr.
Anniston Plant	H. F. Weaver, Mgr.
Longhorn Ordnance	D. L. Eynon (Jan. 1, 1945: R. K. Mueller), Mgr. under Orga
Monsanto, Illinois	W. G. Krummrich (1943: P. M. Tompkins), Mgr.
Monsanto, Tennessee	A. T. Beauregard, Mgr.
Nitro, W. Va. Plant	H. K. Eckert (1942: R. L. Sibley), Mgr.
Queeny Plant	E. J. DePree (1943: P. G. Marsh), Mgr.
Springfield Plant	F. Gronemeyer (1944: K. Ireby), Mgr.
Texas City	H. K. Eckert, Plant Mgr., W. G. Krummrich, Prod. Mgr. (under Organic)
Trenton, Mich. Plant	E. A. O'Neal (1944: J. Wilson), Mgr.

Dr. C. A. Thomas directed all work on the atom bomb, of course.

Many names appear frequently in the correspondence and commendation files--too many deserving of mention to attempt further listing.

pc
3/16/67

EPA/CERRO COPPER/EIL/PCB
ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

to these Monsanto operates 1945?

day

Monsanto owns and operates 18 plants in the United States, two in England, three in Canada, one in Australia and one in South America. In addition, eight government owned plants are operated by Monsanto, comprising 11 units. All but two of these units were designed and constructed by Monsanto engineers.

Briefly they are:

Three plants have been erected for Chemical Warfare Service by Monsanto. In 1942, 1943 and 1944 profit from two of these units amounted to \$2,112,815 all of which was voluntarily returned to the Government by Monsanto. The third CWS unit is not yet in production. The process has been demonstrated on a full commercial scale, and at the request of the Government, it is now in stand-by condition.

* * * *

A plant is in operation in Dayton, Ohio which Monsanto operates for the office of Scientific Research and Development.

* * * *

Also at Dayton, Ohio, Monsanto operates two additional plants which are Government owned war projects.

* * * *

At Texas City, Texas a styrene plant was designed, constructed and is operated by Monsanto for the Rubber Reserve Company. Capacity of this plant is 50,000 tons per year. This was the first of the larger Government owned styrene plants to furnish material in the synthetic rubber program.

* * * *

A Defense Plant Corporation plant is now in operation at Springfield, Massachusetts.

* * * *

Longhorn Ordnance Works, a huge Government owned TNT plant at Karnack, Texas has been operated by Monsanto since 1942.

* * * *

Under construction at Karnack adjoining Longhorn Ordnance Works is an \$8,000,000 plant for the manufacture of a rocket and jet propellant. Working in connection with the National Defense Research Council and military authorities this propellant was developed by Monsanto's technical staff at Dayton, Ohio

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* * * *

On July 1, an important Government plant in Tennessee was taken over for operation by Monsanto

Clinton Lumber - Dec. 1945

MONSANTO

MAGAZINE ★

JULY • 1939

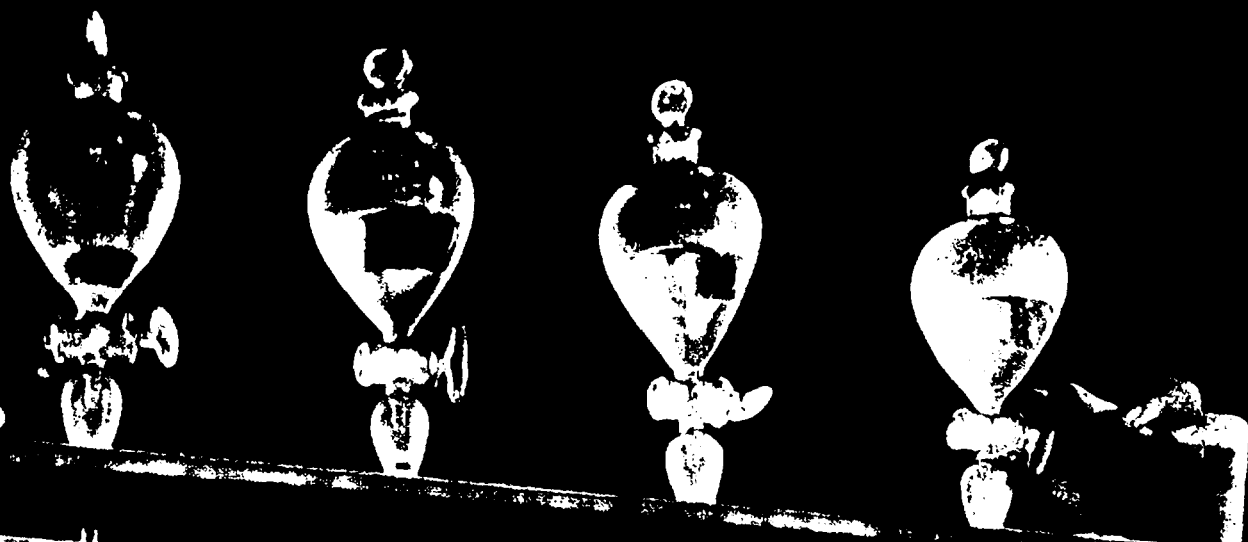
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POWER TO FILTERS

In This Issue WHO SAID FORTY WAS A DEADLINE?

SERVING INDUSTRY



Every hour of every day, Industry adds to the total of human health, wealth, comfort and happiness. Without its turning wheels and plumed smokestacks, our cities would be ghost towns, our farmlands would be dust bowls and empty prairie stretches. In dedicating itself to the service of Industry, modern chemistry is enlisted under the banner of service to all mankind.

MONSANTO CHEMICAL COMPANY • ST. LOUIS

MONSANTO

SERVING INDUSTRY...

MONSANTO CHEMICAL COMPANY
ST. LOUIS, MISSOURI
ATTORNEY-CLIENT PRIVILEGE

which serves Mankind

How Monsanto Serves the Public Through Industry

AGRICULTURAL — 19 products

Phenilage for treatment of ensilage and fodder crops; phosphates for improving feed value; acids for rendering phosphate rock available for plant food; abrasives for polishing and sharpening of agricultural implements; plastics for tool handles, and for insulating.

APPLIANCE — 15 products

Acids and solvents for metal cleaning; lacquers for surface finishing; plastics for all types and parts of appliances.

AUTOMOTIVE — 86 products

Plastic sheets and molding compounds for safety glass, body trim and steering wheels; chemicals for fuels, lubricants and synthetic finishes; anti-oxidants and accelerators for latex sponge upholstery and for tires; acids for batteries and metals; anti-freeze.

AVIATION — 18 products

Compounds to strengthen fabric surfaces, lacquers for coatings and finishes; plastics for all aviation uses; chemicals for better tires, fuels, lubricants and metals.

BEVERAGE — 16 products

Ingredients for flavoring and sweetening; dry ice for refrigeration; phosphates for cleansers and detergents; carbonic acid gas for carbonating beverages.

CARPET AND RUG — 44 products

Accelerators and anti-oxidants for latex; dye intermediates for color; phosphates for cleaning; acids and salts for dyeing and for carbonizing wool.

CERAMICS — 10 products

Chemicals for the milling of raw materials; compounds to strengthen products during processing.

CHEMICAL PROCESS — 60 products

Heavy chemicals, intermediates, special solvents, alcohols, liquid chlorine, organics and inorganics for all types of chemical processing and synthesis.

CONSTRUCTION — 17 products

Chemicals for fire-proofing materials; phosphates and acids for cleaning; Santobrite and pentachlorophenol for preservation of lumber; lacquers for finishes; plastics for decoration.

COSMETIC, PERFUME — 18 products

Manicure lacquers and removers; wetting agents for shampoos, fixatives and solvents for perfumes; chemicals for synthesis; Vue-Pak for packages.

DAIRY — 18 products

Phosphotex as an emulsifying agent in cheese; dry ice and ammonia for refrigeration; phosphates and acids for cleaning; Santamine for sterilizing.

DENTAL — 11 products

Phosphates and flavors for tooth pastes, powders and mouthwashes; plastics for artificial dentures and tooth brushes.

DYE — 75 products

Intermediates for the production of hundreds of dyes and dry colors.

ELECTRICAL — 10 products

Plastics for insulated parts and beauty of design; lacquers and cable compounds for insulated lines; Aroclors as component in non-inflammable transformer fluid; chemicals for rubber insulation and for porcelain bodies.

ENGRAVING — 6 products

Nitric, sulfuric and acetic acids for etching; perchloric acid for etching process; plastics for electrotypes molds.

FLORAL AND FRUIT — 7 products

Chemicals for insect control; muriatic acid for washing fruit; wetting agents for spreading of insect sprays; Vue-Pak transparent packaging material for floral boxes and displays.

FOOD — 27 products

Ingredients for flavoring and for food preservation; phosphates for self-rising flours and baking powders; Vue-Pak for packages.

GLASS, VITREOUS — 8 products

Plastic sheeting for safety glass; salt cake; acids for cleaning; wetting agents for milling of raw materials.

INSECTICIDE — 8 products

Chemicals for control of moths, termites, and peach tree borers; cresylic acid for insecticides; methyl salicylate for improving odor; wetting agents for spreading of sprays.

JEWELRY — 10 products

Abrasives for polishing and grinding; acids for etching; plastics for decorative articles of beauty and utility.

LAUNDRY — 8 products

Chemicals for bleaching and sterilizing; phosphates for detergents; Phosphotex for cleaning compounds and laundry soaps.

LUMBER — 5 products

Santobrite for prevention of sap stain in green lumber; Monsanto Permatol "A" treating solution for control of termites and rot fungi in dry lumber; lacquers for finishes.

MACHINERY — 15 products

Plastics for insulation and for decoration; acids for cleaning and pickling of steels and alloys; abrasives for grinding and polishing; lacquers and finishes.

MARINE — 25 products

Acids for pickling of steel plates; lacquers for finishing; phosphates and solvents for cleaning; plastics for instrument panels and interior trim.

METAL — 25 products

Ferric sulfate for etching; ferro phosphorous for alloys; heavy acids, phosphates and inhibitors for cleaning and pickling; acids for analytical work; abrasives for grinding and polishing.

MINING — 14 products

Flotation agents for ore concentration; abrasives for grinding of drills and mining equipment; acids for analytical work.

PACKAGING — 7 products

Vue-Pak for fabrication of transparent packages; plastics for translucent or opaque containers; lacquers for package finishes.

PAINT — 44 products

Solvents, plasticizers and resins for lacquers and enamels; pure base materials for producing synthetic varnish resins; preservatives and deodorants for paints; lampblack; finished lacquers for special uses; anti-oxidants and anti-skinning agents.

PETROLEUM — 28 products

Chemicals for extreme pressure lubricants; pour point depressants for lubricating oils; anti-oxidants, alkalis, acids and selective solvents for extraction processes; additives for gasoline and lubricating oils.

PHARMACEUTICAL — 60 products

Salicylates, glycerophosphates and other chemicals for the alleviation of pain and the control of specific maladies.

PULP AND PAPER — 46 products

Chemicals for pulp bleaching, digesting and sizing; Santobrite for control of slime and algae; coatings for finished paper.

PHOTOGRAPHIC — 7 products

Plastics for camera cases and plastic sheets for production of animated cartoons; triphenyl phosphate for motion picture safety film; acids for manufacture of photographic chemicals.

PLASTICS — 38 products

Plasticizers and other chemicals for production of raw plastic materials. Cellulose acetate, cellulose nitrate, cast phenolic resin, polystyrene, polyvinyl acetate and Vue-Pak transparent packaging material used for fabricating products of utilitarian value.

POWER PLANT — 17 products

Santosite for removal of oxygen from boiler feed water; Santobrite for slime and algae control; alum and Ferrisul for coagulation and silica removal.

PRINTING INK — 12 products

Lampblack and chemicals to impart color; chemicals to prevent deterioration of inks; to mask odors; to manufacture black pigments with maximum covering power; Santocel to increase viscosity and prevent tack.

RADIO — 9 products

Plastics for the manufacture of colorful cabinets, for controls and insulated parts; lacquers and thinners for finishing.

REFRIGERATION — 10 products

Dry ice for preservation of perishable foods; anhydrous ammonia for refrigeration units; inhibited acids for removing scale; cleansers and detergents.

RUBBER — 47 products

Accelerators to speed up vulcanization; anti-oxidants to prevent deterioration; softeners to improve flexing qualities; mold lubricants.

SHOE, LEATHER — 34 products

Chemicals for the production of finer, softer leather; for giving penetration to dyes; Santobrite for the control of mold growth; lacquers for finished leather goods; plastics for shoe heels and eyelets.

SOAP — 20 products

Phosphotex to enhance emulsifying and water softening properties; acids and alkalis for processing; coumarin for adding fragrance to toilet soaps; Sopanax to retard rancidity and coloration; phosphates for cleansers and detergents.

TEXTILE — 31 products

Chemicals for bleaching, dyeing, degumming and carbonizing; phosphates and wetting agents for detergents; lacquers for coating and printing; Aroclors for delustering rayon.

TRANSPORTATION — 22 products

Chemicals for the manufacture of lighter, stronger and safer steels and alloys; acids for batteries and for cleaning abrasives for polishing; cleansers and finishes for maintenance and beauty; plastics for decoration and utility.

WATER, SEWAGE — 23 products

Liquid chlorine, ferric sulfate, aluminum sulfate and other chemicals for water purification and sewage treatment; phosphates for water softening; Santosite for conditioning of industrial boiler feed water.

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Complete information on Monsanto products available for any industry will be supplied on request. Monsanto Chemical Company, St. Louis, Mo.

WORKS — St. Louis • Carondelet, Mo. • Monsanto, Ill. • Monsanto, Tenn. • Everett, Mass. • Nitro, W. Va. • Norfolk, Va. • Anniston, Ala. • Camden, N. J. • Springfield, Mass. • Ruabon, N. Wales • Sunderland, England • Dayton, Ohio (Research Laboratories) • DISTRICT OFFICES — New York • Boston • Chicago • Akron • Detroit • Birmingham • Charlotte • San Francisco • Los Angeles • Montreal • London, England • Manchester, England • Shanghai, China

CHEMICALS

WHICH SERVES MANKIND

Mr. Queeny
Mr. Belknap
Mr. DuBois
Mr. Sheehan
Mr. Curtis

February 5, 1943

Mr. George D. Hansen
Price Adjustment Section
Chemical Warfare Service
Washington, D. C.

MONSANTO CHEMICAL COMPANY'S PART IN THE WAR EFFORT

Dear Mr. Hansen:

In connection with the work you are doing relative to the renegotiation of our war contracts, you have requested that we inform you of the various activities of Monsanto Chemical Company and its American Subsidiary Companies in the war program. This information is presented to you with the understanding that it will be treated as strictly confidential.

As an exemplification of the spirit of the Monsanto management and entire organization towards the war effort, I quote the telegram which was sent by Monsanto Chemical Company to Mr. Henry L. Stimson, Secretary of War, to Mr. Frank Knox, Secretary of the Navy, and to Admiral Emory S. Land, Chairman of the Maritime Commission, upon the outbreak of war on December 8, 1941, as follows:

"In the state of war now existing Monsanto Chemical Company tenders its full facilities and manpower to any use to which they may be put in the defense of the nation. Please call upon us to assist in the accomplishment of any program in which we may be of help."

This spirit has continued to the present day and will continue until we are victorious in this great global war.

In telling the story of Monsanto's part in the war program, which is attached, we have followed your suggestion that it be covered under certain general headings. In addition to the topics suggested by you, we have described the various activities related to the war effort engaged in by members of our organization and also company activities of a general nature, which form a part of the war program.

Yours very truly,

Edgar M. Queeny
President

ZJD

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MONSANTO CHEMICAL COMPANY'S PART
IN THE WAR EFFORT

1942

ENGINEERING AND CONSTRUCTION WORK ON GOVERNMENT PLANTS

Beginning in the Summer of 1940, we have participated in the engineering and construction of seven government owned projects associated with the war effort. Pertinent information relative to these plants is set forth briefly as follows:

Chemical Warfare Service - First CC-2 Plant

In the Summer of 1940, we were requested by the Chemical Warfare Service to assist them in building and operating manufacturing facilities for a product connected with their war requirements. We had several conferences with them relative to their process and in November, 1940, entered into a contract for the construction of a plant according to their process at Monsanto, Illinois, estimated to cost \$2,282,000. We advised Chemical Warfare Service of our desire to undertake this work without profit and were granted a fee of \$70,000 designed in major part to repay us for non-reimbursable items of overhead expense.

Chemical Warfare Service - First DAT Plant

During the Summer of 1941, Chemical Warfare Service requested our assistance in the design and construction of a plant for the manufacture of a product designated "DAT." In this project we engineered the complete process design and supervised the construction. The process had been developed by us over a period of years and was furnished to the Government without charge. This contract was concluded on August 27, 1941 with an estimated construction cost of \$310,000. A fee of \$6,000 was requested and allowed which represented our estimated non-reimbursable expenses in connection with this work.

Styrene Plant at Texas City, Texas

During the Summer of 1941, we arranged with the Rubber Reserve Company to design and construct a plant for the manufacture of Styrene required in the synthetic rubber program. Our contract for this work dated November 13, 1941, is with Defense Plant Corporation. The size of this project has been increased several times and the plant now being constructed has an estimated cost of \$15,400,000. We have designed this plant primarily from information developed by our research organization and the project is being

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handled by us without a fee. We will actually sustain a loss on its construction. A fee will be received for its operation, but the operation had not commenced on last January 1.

Longhorn Ordnance Plant - Marshall, Texas

In December, 1941, we entered into a contract with the Ordnance Department to furnish consultant service and advice to the architect-engineer and constructor regarding the adequacy of design, engineering and construction, and in inspection of installation of production equipment for this T.N.T. Plant. We also undertook to train key personnel to operate the plant and to establish, equip and maintain adequate guard and fire-fighting forces. The total cost of this work was estimated at \$794,000 and required about one year, for which a fee of \$2.00 was paid. In the same contract we agreed to operate the plant after its completion for a fixed fee based upon the quantity of T.N.T. produced. The original contractors did not complete the construction of the plant and recently we agreed to complete the construction of the plant at an estimated cost of \$350,000 and for a fee of \$5,000.

Chemical Warfare Service - Second CC-2 Plant

During the Spring of 1942, we were requested to design and assist in the construction of a second CC-2 plant for the Chemical Warfare Service having a capacity approximately equal to the designed capacity of the first unit. This project is estimated to cost \$2,600,000, for which we requested and were granted a fee of approximately \$50,000, which we estimate is approximately sufficient to repay us for non-reimbursable items of overhead.

Chemical Warfare Service - Second DAT Project

In July, 1942, we contracted with the Chemical Warfare Service to extend the manufacturing facilities for DAT. We designed and advised on the construction of this project on the same basis as the second CC-2 plant-- a small fee sufficient only to repay us for non-reimbursable overhead items. The estimated cost of this expansion is approximately \$350,000.

NDRC Plant at Dayton

During the Spring of 1942, National Defense Research Committee requested our assistance in laboratory research work, and subsequently in the design, construction and operation of a pilot plant at Dayton, Ohio embodying the results of such laboratory work, to produce a new and confidential war product. This work is being taken care of at Dayton without expectation of profit to us. The estimated cost of the design, construction and operation is \$315,000.

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OTHER ENGINEERING WORK PERFORMED

In addition to the engineering work performed in connection with Government owned plants, it was necessary to do engineering with respect to the various extensions made to the Monsanto Chemical Company plants which are described under the heading "Expansion of Plants for War Purposes." These extensions of plant facilities were made exclusively through the use of our own funds.

Further, our engineering sales organization has assisted in the construction by other companies of ten sulphuric acid plants, which are being used directly in the war effort. This work was done as part of the service rendered by us in the sale of our catalyst for the manufacture of sulphuric acid.

DEVELOPMENT WORK

Monsanto Chemical Company, during the past two years, has devoted a great part of its research work to the solution of problems relating to the war program. The research work devoted to this cause has grown in intensity until at the present time about 80% of our research work is for purposes useful in the war program.

Following are brief descriptions of the various projects relating to the war program which have either been completed by, or are now receiving the attention of our various research departments:

1. Development of a large part of the process to be used at Texas City, Texas in the manufacture of Styrene, a raw material in the production of synthetic rubber. This involved not only the developing of the process in the laboratory, but also the construction and operation of a pilot plant to prove the numerous steps in the process. The expense of building and operating the pilot plant was borne by Defense Plant Corporation, but the cost of the research, prior to that last stage, was borne by us.
2. At the request of the National Defense Research Committee, we have done research work at our cost and without profit on a problem relating to motor fuels. This problem involved the building of a motor test laboratory containing twelve motors and the testing of hundreds of additives to motor fuels.
3. We are developing a formaldehyde process based on a method of producing this product by the direct oxidation of methane, on which we are in close contact with the Ordnance Department.

Formaldehyde is extremely important to the war program for the manufacture of a new explosive, which is superior in several respects to the old type of explosive.

4. Development of a process for making acetylene, based on the Wulff process, which is under active consideration by the Office of Production and Research Development and which furnishes the raw material for vinyl chloride and other war essential plastics.
5. Development of a new method for making cotton fabrics water repellent is being actively studied, which we are told is important in the war program, and of a new method of permanently fireproofing cotton, which will be able to undergo in excess of a dozen launderings and dry-cleanings without seriously impairing its fire resistant properties.
6. We have developed substitutes for natural waxes which by reason of the war are not available. Samples of these waxes are now being distributed to various war industries which use waxes in their production.
7. Development of detergents which in combination with soap will give lather in salt water. These are needed for mobile laundry units for the Army and Navy.
8. We are, in conjunction with General Electric Company working on a secret polymer which has superior electrical properties for Army and Navy use.
9. In cooperation with the rubber industry, we have developed a thermosetting form of polyvinyl butyral, known as Saflex TS. This material has been successfully substituted for rubber for many coating purposes. It is being used very successfully for the manufacture of military rain coats. We have also developed a special formulation which is being used in Army pontoons. The material has many other potential uses in life vests, and all types of flotation gear for the Army, Navy and Air Corps.
10. We have developed a lining which is being used in self-sealing gas tanks for airplanes, which is resistant to gasoline and which protects the rubber portion of the tank.
11. A considerable amount of development work was done under contract with the Office of Scientific Research and Development on a plastic incendiary bomb. This work resulted in a product, which met the original specifications, but was rejected for military use because of a need for a heavier type of weapon. We were re-imbursed for a part of the cost of this research work.

12. At the request of the Navy, we developed a screen wire laminated plastic for use in place of glass in applications where the latter is objectionable because of its weight and tendency to shatter under bomb explosion.
13. We have contributed to the development of a light weight packaging material totally impervious to moisture to be used in transporting supplies by air over great distances, by working out a coating for this material which is an excellent heat sealing medium, all of which has been approved by the Air Corps.
14. We have spent considerable time and money in endeavoring to improve the quality of grinding wheel resins in order to obtain one which permits a better grinding wheel to be made, which in turn, speeds up production of steel parts ground by such resin-bonded wheels.
15. For the Bureau of Ships we have developed high-impact molding materials, which will enable contractors to mold parts which were formerly machined, thus saving valuable man hours.
16. We have developed a clear sheet cellulose acetate plastic which is used in windows in military aircraft.
17. At the request of the United States Navy we developed a plastic fuse cover which serves as a protection to anti-aircraft shells from moisture and water sprayed on board ship. These covers are proving very valuable to the Navy.
18. We have installed a laboratory and have done some work for the study of pulp molding which is a field in which the Navy is interested. We have had conferences relating to this work with officials of the Naval Aircraft factory.
19. We have done considerable work in determining the physical-mechanical properties of plastics in order to provide data for the Armed Forces and for manufacturers of war materials who are forced to use plastics by reason of the shortage of metals.
20. An important research activity of the Company has been carried on under a secret contract with the Chemical Warfare Service, under which six of our research staff are working on confidential problems.
21. We are doing considerable research work in connection with improving processes and increasing output for the manufacture of Sulfa Drugs and Sulfa Drug intermediates, which are extremely important in the war effort. Special granulations have been worked out at the request of the military forces.

22. Our research departments have developed numerous improvements in processes which have enabled us to expand production of chemicals needed for war with a minimum expenditure for critical construction materials. Following are a few examples of materials, the production of which has been so increased:

Phthalic anhydride
Tricresyl phosphate
Dibutyl phthalate
Phenol
Sodium sulfite technical
Chlorsulfonic acid

23. We have developed a process for the production of paratoluene-sulfonamid, which is needed by the Chemical Warfare Service. This process eliminates the use of chlorsulfonic acid, which is scarce and also involves a substantial saving in toluene consumption.
24. We have made extensive research study on problems relating to the use of low grade domestic materials for paper sizing, water purification, carbonizers and other purposes in place of the high grade foreign bauxite which is now being used exclusively in metallic aluminum products.
25. We have performed research work for the War Production Board in connection with making chlorine. Further, we have carried out work for the National Defense Research Committee for the development of new tanning materials for leather. Also, at the request of this Committee, we have been developing nitric acid for use by China, utilizing new raw materials. For Chemical Warfare Service, we have carried out a confidential contract for research on poison gas.

We could expand this list of research work we have done and are doing for the war effort to a much greater degree, but we believe the above examples are sufficient to demonstrate the fact that Monsanto Chemical Company's research facilities have been set aside very largely for developments useful in the war program. Although a small part of our research work has been paid for by the Government, the remainder represents an expense of this Company.

POOLING OF PATENTS

Monsanto Chemical Company, Rubber Reserve Company and nine other companies are parties to an agreement dated March 4, 1942, entitled "Agreement on Exchange and Use of Technical Information Relating to Styrene." The Attorney-General, in his letter of May 19, 1942, to the president of Rubber Reserve Company, approved this so-called pooling of technical information and patents on the manufacture of styrene.

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In accordance with the foregoing agreement, Monsanto has submitted to the Technical Director of Rubber Reserve Company a two volume report, outlining in considerable detail its technical information and developments in this field.

We have also given to the National Defense Research Committee our knowledge relating to and patent application for the making of pentaerythritol. Further, through cooperation with another company, a licensing arrangement under patent has been made to facilitate work on confidential projects for the United States Navy.

EXPANSION OF PLANTS FOR WAR PURPOSES

During the course of their work in St. Louis, the representatives of the Price Adjustment Section of the Chemical Warfare Service, were given a list of the expansions of our plant facilities made through the use of our own funds. They were also informed as to the reason for each project as well as the use of the products to be manufactured therein in the war effort.

The products which are being produced in these new facilities are as follows:

St. Louis, Missouri Plant

Phthalic Anhydride
Dibutyl Phthalate
Tricresyl Phosphate
Aniline Oil
Dichloramine T
Dichloramine B
Paratoluenesulfonchloride
Para Acetyl Amine Benzene Sulfonchloride
Sulfanilamide
Sulfathiazole

Monsanto, Illinois Plant

Trichlorobenzene
Dinitrochlorbenzene
Chlorine
Phenol
Aniline Oil
Vanadium Catalyst
Nickel Catalyst
Oleum and Sulfuric Acid
Phosphorus Pentoxide

Norfolk, Virginia Plant

Theobromine

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Anniston, Alabama Plant

Diphenyl
Aroclors
Calcium Carbide

Trenton, Michigan Plant

Phosphoric Acid and Sodium Phosphates

Nitro, West Virginia Plant

Thiourea
Phenyl Beta Naphthylamine

Everett, Massachusetts Plant

Phthalic Anhydride
Sulfuric Acid
Nitric Acid
Alcohol

As a result of the expansions of plant facilities for production of the above products, it has been necessary to extend the power plants at the Monsanto, Illinois and Springfield, Massachusetts plants.

The expansion of our phosphorous production was completed in December, 1940. This extension increased our capacity by 40% which has greatly assisted the Chemical Warfare Service in obtaining their requirements of elemental phosphorous.

THE USE OF SUBCONTRACTORS

In connection with the major work which we have engineered and constructed for the Government on war projects, we have subcontracted work in varying degrees. In the case of all major subcontracts the actual arrangements both with reference to selection of the subcontractor, as well as the fee and terms of the contract, were developed with the governmental agency involved.

In the case of some minor contracts, we made the arrangements and received approval of the proper government contracting officer before concluding arrangements.

On our first Chemical Warfare Service project we subcontracted the engineering of utilities, foundations and general services and we subcontracted as a whole the construction work. DuPont had developed the process design. The selection of the subcontractors as well as fees on this project were negotiated at Washington. The same situation prevailed in connection with our second Chemical Warfare Service project at Monsanto, Illinois.

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Our Styrene plant at Texas City called for subletting the engineering of a portion of the process and for the subletting of all construction work. Both of these subcontracts were developed in Washington by the Defense Plant Corporation who made final selection of subcontractors.

At Dayton we sublet as a whole all construction work for the National Defense Research Committee project and in this case the arrangements were developed by us and the contract and subcontractor were approved by Washington authorities.

In connection with the recent expansions of the two Chemical Warfare Service projects at Monsanto, Illinois, we acted as architect-engineer and the Government negotiated contracts directly with constructors. On these projects we were responsible for developing the process design but sublet to a subcontractor the engineering of utilities, buildings and general services.

It has been our practice in connection with the expansion of our own facilities through the use of our funds to use subcontractors almost entirely on construction work, except in cases of expansion where it has been necessary to carry out such construction work in existing plants with minimum interference to current operations. In such latter cases, we have used our own construction force.

COOPERATION WITH OTHER SUBCONTRACTORS

In carrying out the work on several of our Government owned projects, we have cooperated with other chemical manufacturers serving as contractors on similar projects.

The first Chemical Warfare Service project we constructed from plans developed by DuPont Company in cooperation with the efforts of Dow, Chemical Warfare Service and ourselves. We were solely responsible for the design of the second Chemical Warfare Service project, as well as for the later enlargement of these facilities.

In the expansion of the first Chemical Warfare Service project at the request of the Chemical Warfare Service, we initially cooperated with Dow and DuPont to develop a standardization for the expansion. General conditions at the three locations developed to be sufficiently different to prompt Chemical Warfare Service to later alter this arrangement and directed each company to proceed along individual lines. Technical and process information was exchanged between the three contractors.

Our Styrene project was engineered by Monsanto from research information developed by ourselves and with the assistance of a subcontractor on the design of some portions of the process. Before construction was far along, Kubber Reserve Company arranged with other contractors (including Dow, Carbide and Carbon, and Koppers) to cooperate to the

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extent of exchanging process and design information. This arrangement has resulted in each of the plants having available confidential, technical information of others as a means of improving their process.

The engineering of the National Defense Research Committee plant at Dayton was accomplished by our group who cooperated with another contractor working on the same type of problem.

At Longhorn Ordnance Works, we as operators, cooperated with Ford, Bacon and Davis in the design of the general layout and utilities.

Other noteworthy instances of our cooperation with other contractors are as follows:

1. Our research laboratories at Dayton have worked with Wright Field on several pressing problems.
2. Approximately 35% of the maintenance shop facilities of our Springfield, Massachusetts plant have been made available to an outside company for machining parts for 90 millimeter anti-aircraft guns.
3. We have cooperated with Weldon Springs Ordnance Works in expediting the completion of needed new facilities for oleum at our Monsanto, Illinois plant at a much earlier date than could normally be expected.
4. We have worked closely with outside companies on a confidential naval air corps project and in the development of synthetic coatings for military uses.
5. We have done cooperative engineering work with the DuPont and United States Industrial Alcohol companies in connection with the development of plants for the production of alcohol from grain instead of molasses as raw material and at the request of Defense Supplies Corporation have processed high wines from other distilleries.

Many other specific instances of cooperation with contractors and outside companies in the furtherance of the war effort could be mentioned. In addition, we are continually cooperating with our customers producing war materials. Such work has required the close attention of our sales research and technical service departments.

SPECIAL RISKS TAKEN BY THE COMPANY

Monsanto Chemical Company has invested during 1941 and 1942 funds in excess of \$10,000,000 in expanding plant facilities to take care of demands created by the war. Most of these expansions have been made under Certificates of Necessity allowing amortization over a five year period, but circumstances may arise from which our company

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may sustain losses.

We have also spent considerable sums of money on research work with the hope of developing products useful in this war economy. For example, we have spent during the past two years approximately \$250,000 on a formaldehyde process based mainly on advice from the Ordnance Department that more formaldehyde will be needed and that it is of vital necessity to the war effort. We have no assurance that the formaldehyde project will eventuate, yet we are continuing to expend funds on this development.

MATERIAL AND OTHER HANDICAPS ENCOUNTERED

In May, 1941, Monsanto Chemical Company, realizing that the procurement of production materials and equipment would involve many restrictions established at that time a "critical materials department" to expedite the obtaining of materials and equipment. The department has been expanded from time to time as additional materials became critical and at present includes 44 employees who are actively engaged in matters pertaining to the procurement of materials, which includes maintaining a small staff of technical men at an office we have opened at Washington, D. C. While this department has experienced difficulty at various times in securing materials, it has been able to overcome most of the obstacles with the result that our production and construction has been carried on without undue delay.

The difficulty in obtaining scarce raw materials has been overcome largely through the use of substitutes. For example, our stock of imported high quality bauxite was requisitioned by the War Production Board for use in metallic aluminum products. As a substitute we are using domestic low-grade bauxite. Again, our supply of molasses for New England Alcohol Company, which comes from Puerto Rico, used in the production of ethyl alcohol has been shut off due to the submarine menace on the Atlantic seaboard. We have converted our plant facilities at considerable cost so that wheat products can be used as a substitute for molasses in the manufacture of alcohol.

REFUNDS TO CHEMICAL WARFARE SERVICE

Upon accepting the contract to construct the first plant at Monsanto, Illinois for the Chemical Warfare Service the Executive Committee of Monsanto Chemical Company decided and so informed the Chemical Warfare Service that the construction of such plant and any subsequent plants as well as the operation of the plants for the Chemical Warfare Service would be taken care of without profit or loss to us.

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In carrying out this policy, we have made certain refunds and credits to Chemical Warfare Service as follows:

<u>Contract</u>	<u>Project</u>	<u>Amount of Refund or Credit</u>
W-266-CWS-119	Construct CC-2 Plant	\$ 20,000.00
W-266-CWS-194	Operate CC-2 Plant	72,844.43
W-266-CWS-219	Operate CC-2 Plant	147,886.66
W-266-CWS-266	Operate CC-2 Plant	210,884.05
W-266-CWS-227	Operate Dichloramine T Plant	52,247.56
Total Refunds and Credits		<u>\$503,862.70</u> 1942

PERSONNEL

Monsanto Chemical Company has taken an active part in the war effort through the services of its personnel in various activities in the war program. A brief description of each type of activity follows:

\$1.00 a Year Men

The Company has contributed the services to various war agencies of the following members of its organization on the basis of \$1.00 a year:

Mr. H. M. Harker - serving as head of the Intermediate Section of the Aromatic and Intermediate Section, Chemicals Branch, War Production Board.

Mr. A. H. Smith - serving as consultant to the Aromatic and Intermediate Section, Chemicals Branch, War Production Board.

Mr. A. Kirkpatrick - serving as consultant to the Plasticizers and Glycols Section, Chemicals Branch, War Production Board.

Mr. J. R. Turnbull - serving as Chief of the Thermoplastics Unit of the Plastics and Synthetic Rubber Section, Chemicals Division, War Production Board.

Messrs. Harker and Turnbull are on a full time basis and Messrs. Smith and Kirkpatrick on a part time basis.

In addition, Mr. Tomlin of the Company's Rubber Service Department served as a \$1.00 a year man during a part of the year 1942.

Special Assignments

The assistant director of the Company's Patent Department accepted

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a temporary assignment with the Office of Petroleum Coordinator from February 23, 1942 to May 2, 1942, engaged in work on the aviation gasoline program as contract negotiator and technologist. An additional assignment along these lines was accepted for the period from May 20, 1942 to May 31, 1942.

The director of Monsanto Practice was requested by the Under-Secretary of the Navy on July 1, 1941 for duty in the Bureau of Ordnance in Washington. His time was devoted for a number of weeks to development and execution of the Navy Incentive Program which is now the Army-Navy Production Award Program. In addition, he served as an advisor to the Bureau of Ordnance for a number of months and was later recalled by Admiral Blandy, Chief of the National Bureau of Ordnance for a special assignment. It is estimated that more than 100 days were devoted to the Navy Department. All expenses in connection with these assignments were borne by the Company.

Through the director of its Export Department, the Company is represented on the Advisory Committee to the Board of Economic Warfare. This is known as the Overall Advisory Board and is comprised of a number of practical exporters in the United States who assist the Board of Economic Warfare in formulating and executing plans for the handling of export traffic other than lend-lease.

Memberships on Boards and Committees

A large number of Monsanto personnel are serving on advisory boards with various governmental agencies. A list of such personnel and their activities is as follows:

Dr. C. A. Thomas, Director of Central Research Department and a Director of the Company:

National Defense Research Committee, Explosives Division
Consultant to the Baruch Rubber Committee
Member of the General Styrene Committee for Rubber Reserve Company

Dr. C. A. Hochwalt, Assistant Director Central Research Department:

Member of National Defense Research Committee, Explosives Division
Member of the General Styrene Committee for Rubber Reserve Company

Mr. W. M. Rand, Vice President and Director of the Company:

General Procurement Consultant to Chemical Warfare Service
Member of the Chemical Advisory Committee, Army and Navy Munitions Board
Member of the Inorganic Acids and Industry Advisory Committee
Member of the Regional Advisory Committee of the War Manpower Commission

Member of the War Production Fund Committee to Conserve Manpower

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Other boards and committees on which Monsanto's personnel were represented are:

War Transportation Conservation Committee
Referee Board of the Chemical Branch of Office of Production
Research and Development
United States Department of Labor, Committee on Conservation
of Manpower
Industry Advisory Committee, Plant Facilities Section, Chemical
Branch of War Production Board.
Industry Advisory Committee on Phthalic Anhydride
Drug Resources Advisory Committee, Medicinal Chemicals Section,
Army and Navy Munitions Board
Organic Resins and Plastics Industry Advisory Committee
Vinyl Resins Producers Industry Advisory Committee
Army and Navy Board Advisory Committee on Plastics and
Nitrocellulose
Government Relation and Defense Committee, Plastics Materials
Manufacturers Association
Plastics Advisory Committee on Plywood Adhesives

General

A member of our organization who has intimate knowledge of where sulphuric acid and other plants are located in Japan transmitted information to the Military Intelligence of both the Army and Navy, regarding such locations and the capacities of such plants. A Vice President of the Company, who is well versed in European affairs, through his many visits to European countries, has consulted with the Military Intelligence of both the Army and Navy with regard to chemical operations in Europe. Others of our staff have furnished information on location and capacities of European phosphorous plants. A survey was made by a member of the Company's sales development department for the War Production Board. The director of development submitted a report to the Board of Economic Warfare containing information in regard to German synthetic phenol.

GENERAL

The assumption of responsibility for the construction and operation of Government owned plants and other work we are doing in the war effort has placed a heavy burden on the entire organization, but one we are all happy to assume.

It has been our policy to use experienced and trained engineers, accountants and others on government projects and have engaged new employees to either take their place or the place of those who might have been advanced to fill such vacated positions. Executives of the Company have put forth greater effort to be certain that these government projects are being successfully pursued and that the

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regular work of the Company continues as near as possible on a normal basis.

Monsanto (Australia) Pty. Ltd., an associated Australian Company, was requested by the Australian Government to produce sulfanilamide, sulfaguanidine and formaldehyde for war purposes. Our Development Department in St. Louis has spent considerable time and effort in assisting the Australian company in complying with the request of their government.

By reason of the inability to import raw material for the manufacture of theobromine, we have formed an American company known as Monsanto of Brazil, Inc. for the purpose of producing theobromine in Brazil which is to be used in this country. This will save valuable shipping space. Needless to say this has required the attention of several of our officials during the past several months and will require attention until the plant is placed in operation in the latter part of 1943.

The Managing Director of our British subsidiary, Dr. Lloyd F. Nickell, came to this country recently at our request and with the aid of the War Production Board and the British Government. The purpose of bringing Dr. Nickell to this country was to learn at first hand the part our British subsidiary is playing in the British war effort, what we in America can do to help in this regard, and also what we might learn from their experience and to arrange for the manufacture in England of products useful in their war effort. We are certain that Dr. Nickell's visit has been to the mutual advantage of both countries.

It may be worthy of mention that many of our men who have expert knowledge of certain chemicals which are important in the war effort are being requested by the various war agencies for information about such chemicals. This information is freely furnished and is in addition to that furnished by our men on advisory boards and committees.

Like most companies, we have successfully completed War Bond and Scrap Drive campaigns. Our employes are diverting approximately 9% of their earnings to the purchase of War Bonds.

Several of Monsanto's plants have received the joint Army-Navy E Award "for the fine record in the production of war equipment." These plants are situated at St. Louis, Missouri, Monsanto, Illinois, Monsanto, Tennessee and Anniston, Alabama. In addition, the executive branch of the Company was awarded a joint Army-Navy E and the two Chemical Warfare Service plants at Monsanto, Illinois were also accorded this honor.

Monsanto Chemical Company is interested in fostering friendly relations with South American countries. In this connection, we have been cooperating with the Office of Coordination of Inter-American Affairs under the direction of Mr. Nelson Rockefeller, and we plan

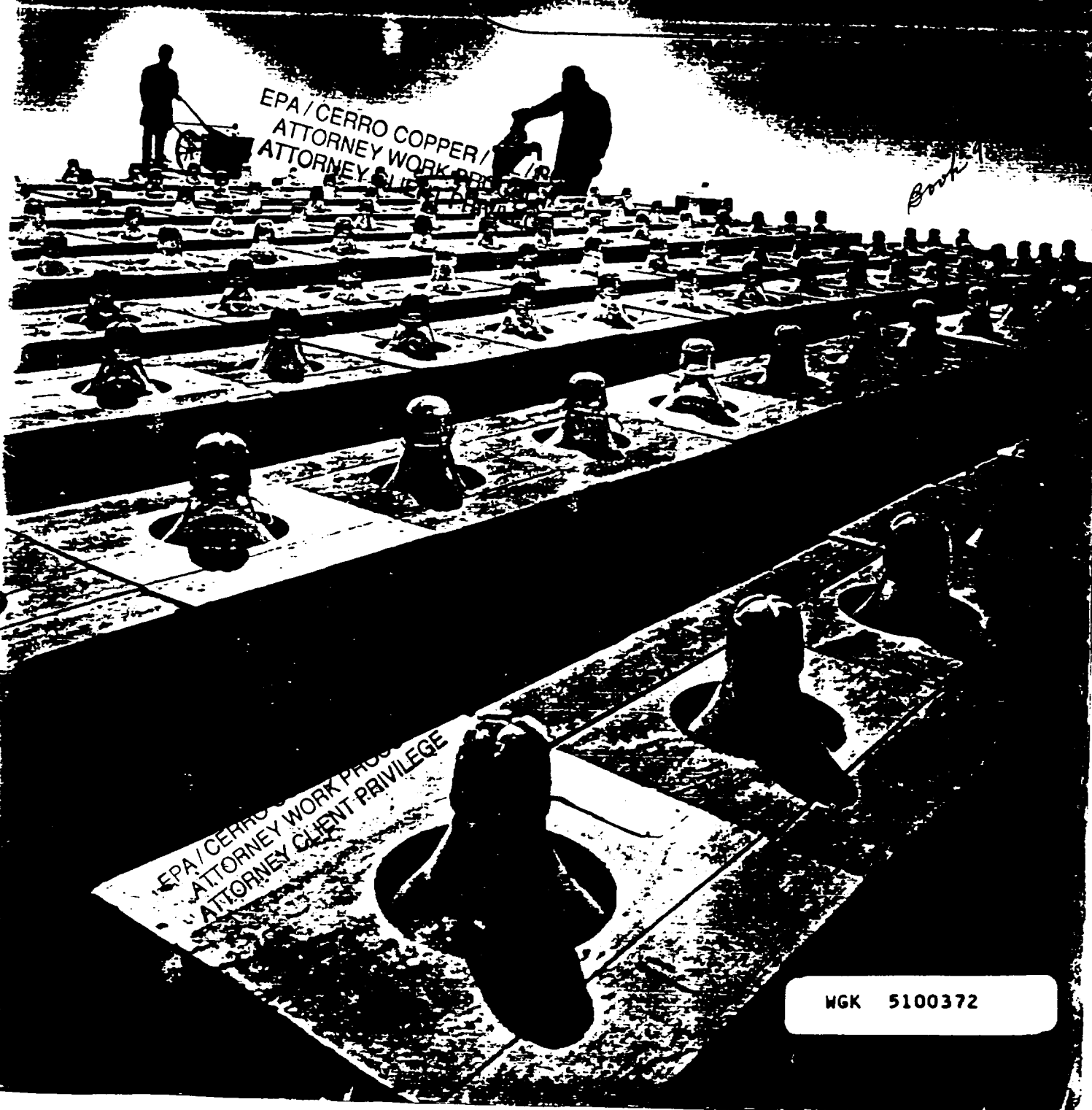
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likewise, we are cooperating with the China Institute of America with a view towards training Chinese chemists in our plants so that they also can return to their country and give China the benefit of their knowledge of American chemical practices.

St. Louis, Missouri
February 5, 1943

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WAR ACTIVITIES REVIEW



WGK 5100372

January 5, 1943 was a great day in the history of the Monsanto, Illinois, and Chemical Warfare Service plants of Monsanto. On that day, both of these plants received the coveted Army-Navy Production Award for excellence in the production of vital war material. The Army-Navy "E" burgee, official symbol of the award, was presented to each plant by Brigadier General Paul X. English, Chief of Industrial Service, Chemical Warfare Service, at a special ceremony held in a new manufacturing building of the Monsanto, Illinois, plant and attended by employees and their

families. Official "E" pins were given to all employees in both plants in recognition of their individual contributions to the overall achievement.

The photograph at the left was taken at the award ceremony looking toward the speakers' stand at the end of the building.

The "E" burgee now fly from the flag-staffs of both plants as a daily reminder that our job in this war is a mighty important one and that the very lives of some of our fighting men depend on how well we do it.

WAR ACTIVITIES REVIEW

of the Monsanto, Illinois plant of Monsanto Chemical Company

Prepared by the Monsanto, Illinois, Plant Safety Committee

C O N T E N T S

Foreword	2
by W. G. Krummrich	
Labor-Management Meetings	2
by Bert Kinder, S. Cottrell and G. W. Donovan	
Toward a Safer 1943	4
by L. T. Lanz, J. E. Dyson and F. W. Kreitner	
Suggestion Contest Winners	6
Slogan Contest Winners	9
Looking Ahead	9
by L. T. Lanz	
Blood for Victory	10
by Harold Kollme and Ray Thompson	
Transportation	10
by T. P. Hickey	
Getting in the Scrap	11
by O. J. Brouse	
War Bond Drive	11
Plant Protection	12
by P. M. Tompkins	
In Case of Fire	13
by O. C. Stief	
A Pair of Woman's Hands	14
by Helen McKay	
Credit Union	14
by T. F. Briggs	
In the Service	15

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MEETINGS

handling are available. Ideas for promoting safety are welcome because the elimination of hazardous conditions results eventually in conserving manpower, which is the most vital element in production. The difficulty of obtaining construction materials and new equipment under present conditions is well known to all of us, and many suggestions are made for utilizing substitute materials or for making some new use of equipment which is already available.

In the Mechanical Division meetings of the various crafts have been held weekly. These have been conducted in much the same fashion as the meetings with the operating groups. The grouping of the different crafts in the Mechanical Division has been set up as follows:

- Machinist Craft
- Electrical Craft
- Pipefitter Craft
- Carpenter and Bricklayer Crafts
- Painter Craft
- Sealmen, Blacksmith and
- Oilier Crafts
- Welder Craft

Ironworker and Boilermaker Crafts

Leadburner Craft

Truck and Crane Operators

Riggers and Laborers

It has been attempted to maintain a standard membership in the Mechanical Division in each individual group. This membership consists usually of one or two mechanics, one helper or apprentice, one foreman, an engineer and his assistant, the craft shop steward and a member of the union committee. The supervising mechanical engineer presides at the meeting.

While the suggestions of the operating groups usually deal with ways and means of increasing production or improving working conditions, the suggestions in the mechanical group usually deal with better maintenance methods, or with the utilization of scrap, or the salvage of obsolete or unused equipment. Each suggestion is carefully noted and written up along with the name of the man who made it. It is then acted upon by the supervisory forces and, if at all possible, is put into effect immediately. But regardless of whether it is possible to use the suggestion or not, an answer is prepared. At the next meeting, a review of all suggestions is presented and discussed.

Thus each week there are three groups at work: the two operating groups and one mechanical group. At first, participants in the meetings were somewhat reluctant to

bring forward their ideas because they did not seem to be particularly brilliant or startling, but it soon became apparent that the simplest ideas were the ones that could be put into practice most easily and from which benefits could be obtained most quickly. Suggestions then became much more numerous, and it is frequently necessary to close a meeting for lack of time rather than for lack of ideas. No one has a corner on bright ideas, and practical and usable suggestions have come from all classifications of the work force.

Minutes of each meeting are kept and written up, and copies are posted in all the departments concerned. A separate copy is provided for the union representative who attends the meeting, and additional copies are distributed to other members of the personnel who may be interested. About a week before each meeting a bulletin is posted showing what action has been taken on the suggestions of the previous meetings. Thus everyone concerned knows just where matters stand on all suggestions previously presented. At the next meeting an opportunity is provided for anyone to comment on the action that has been taken.

The union committee has been very helpful in conducting these meetings. The supervisory staff has been able to discuss problems with a large number of men and has been able to discover hitherto unsuspected talent among the work force.

The officers of Chemical Workers' Local 20032 are, seated, from left to right, R. Schmulbach, assistant financial secretary, O. Butler, president, C. Langwith, and P. Hanger, both of the executive committee, and B. Kinder, vice president. Standing, E. Hall, recording secretary, C. Young, financial secretary, L. McCraw, executive committee, H. Kollme and C. Pirlie, both of the auditing committee. Absent J. Hughes, auditing committee.



this purpose and comprised of representatives from both plants. This committee functioned during the two months of the campaign and is now continuing its duties into 1943 in line with the greater emphasis to be placed on safety throughout the year.

The primary purpose of the Greater Safety Campaign was to arouse interest in safety and to bring to light and correct any unsafe working conditions in the plants. To accomplish this a plant-wide mass meeting was held on the opening day of the campaign, safety bulletins were posted periodically, safety films were shown, special displays and demonstrations were arranged, and weekly safety suggestion and slogan contests were held.

The success of the campaign has exceeded all expectations. Safety is talked and practiced as never before, and the wholehearted cooperation of both management and employees in eliminating unsafe conditions and practices has been most gratifying.

What at first started as a temporary campaign has now developed into a permanent program, and the original committee has been designated a permanent standing committee empowered to make decisions relative to any matter of safety. More authority has been given to it than has ever been imparted to any previous safety group.

The committee trusts that in its endeavors to continue to promote the ideals and principles of safety at the Monsanto, Illinois, and Chemical Warfare Service plants, it will receive the support and good will of all. It gratefully acknowledges the fine spirit and cooperation already extended it by the management, by the union and by all other groups and individuals.



The Shop Stewards' Committee, witnessed a movie as a part of its campaign. In the front row, from left to right, are M. P. Robertson, C. Drennan, R. G. LePere, and T. L. Vivian. Second row, M. G. Rosson, F. Stoner, E. J. Schmidt, F. DuVall, A. Taylor and H. Kollme. Back row, L. J. Hellyer, E. J. Rogers, J. Wallace, W. D. Weinel, C. H. Ross, J. R. James, P. Ryan. Absent: D. C. Tripp, A. Neeman, J. Johnson, E. L. Summers, C. H. Compton, L. A. Wheeler, C. A. Johnson, H. W. Hubbs, T. F. Briggs, J. Jones, H. H. Hayden, and J. J. Smith.



R. E. Liebig is explaining to his fellow workmen the plans for the safety campaign in his departmental meeting. Seated facing Liebig are J. C. McKnight and J. E. Masters. Standing, left to right, are C. B. Lough, O. M. Isbill, J. H. Humes, E. B. Beasley, A. E. Flahan, W. C. Forness, W. Powell, W. E. Voyles and A. Dall.



Jack Lanz demonstrates the merits of a safety shoe by proving its crush-resistance with an ingenious toe testing machine. Committee members watching the test are, from left to right, Joe Manestar, F. W. Kreitner, S. Peel, T. Sullivan, A. McCutchen, J. E. Dyson, O. Butler, H. Kollme, C. Ainsley, and J. D. Sager. L. McCraw and E. Anderson, also members of the committee, were absent at the time the picture was made.

WARPOWER

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Jim Dalton



Ken Grandcolas



R. A. Bingham



J. J. Smith



Len Anderson



D. McWilliams

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SAFETY SLOGAN WINNERS



Ed Mason looks confident here as he drops a safety slogan into one of the special boxes placed throughout the plants for this purpose. Perhaps his will be a winner.

Less remunerative to the prize winners but nevertheless an important part of the campaign was the Safety Slogan Contest, also conducted by both plants on a weekly

basis with the Safety Committee acting as judge. Below are the winners, each of whom received \$5 in War Stamps. The slogans were posted weekly throughout the plants.



F. Kraak



E. S. Robson



F. W. Kreitzer



E. H. Nimnicht



A. Habermehl



H. W. Callaway



A. P. Taylor



M. Lochmann



J. Adams

LOOKING A-HEAD...

The Safety Committee directing the Monsanto Greater Safety Campaign met with such success and secured such cooperation from labor and management alike that it did not disband at the termination of the Safety Campaign. Unsafe conditions have never before been revealed so thoroughly, nor have they been corrected so quickly. Therefore, it was decided that the Committee should continue its work into 1943.

The Safety Contest, though changed, will also be continued; monthly awards of a War Bond and War Stamps will replace the original weekly ones for the best safety suggestion and slogan. As before, everyone is urged to participate by reporting all unsafe plant practices or equipment and by writing safety slogans. The contributions of the men of the plant and the help of the supervisory force made the Safety Campaign a success; this fact the Committee gratefully acknowledges.

To change this manner of concerted effort would bring failure. With this in mind as the plans for 1943 are laid, it is hoped that the Committee will receive throughout the year the same splendid cooperation it did in the first two months of its existence. We at Monsanto, by our practice of safety, can demonstrate our patriotism by helping make history of the simple slogan, "Safe Manpower is Warpower".

Plant Safety Committee
L. T. Lanz, Secretary

GETTING IN THE SCRAP

By O. J. Brouse

Monsanto is a large contributor of scrap material to the war effort. The Monsanto, Illinois, plants during 1942 collected and sold for use in war production over 1,500,000 pounds of scrap materials of all kinds. The more important items are listed below:

Iron and steel	1,191,640 lbs.
Lead	304,097 "
Copper	26,420 "
Paper pulp	10,150 "
Rubber	8,820 "
Brass	3,146 "
Burlap fiber	2,783 "
Stainless steel	1,681 "
Nickel	811 "
Monel metals	796 "
Aluminum	436 "
Manila rope	375 "

The amount of scrap iron and steel collected is enough to make 23 medium tanks.



The maintenance department is inspecting usable idle equipment with a view toward reconditioning it and putting it to work or making it available to other Monsanto plants through the company's central clearing house for surplus equipment.

These Mechanical department men inspect their equipment with that scrap-for-victory gleam in their eyes, as they scour their whole department for salvage. From left to right are Richard Siefert, Charles Whalen, William Lancey, Everett Fry, Bert Kinder and M. G. Webber.

WAR BOND DRIVE

Practically everyone now recognizes the necessity of providing money to pay for all of the munitions and equipment being turned out as a part of the country's stupendous war production program.

In the Greater Monsanto War Bond Drive of June, 1942, the employes of the Monsanto, Illinois and Chemical Warfare Service plants came through with flying colors. Of the total employes of both plants at the end of the drive, 99.87% had signed up for regular purchase of War Bonds in an amount equal to over 7% of the regular combined payroll.

Much of the credit for this worthwhile achievement goes to T. P. Hickey and the shop stewards, who were in charge of the drive among the hourly employes, and to R. S. Thomson, who was responsible for the salaried employes.



G. Weizler, R. Bonham and P. L. Weintritt call at the Time Office window to receive their War Bonds from Mrs. A. B. Bradford. Nearly all employes buy bonds each pay day.

*picture on
both sides of
page*

superintendents, are now available on each shift. Certain first-aid men are designated to report to fire calls. Contact is maintained with the local Civilian Defense Group so that we can participate in the district medical or ambulance service in case of any serious emergency.

Maintenance Service is under the direction of Mr. L. F. Bacon. This service includes protection of buildings, illumination control, and control of services. Additional lighting has been provided so that all portions of our fence line are now well illuminated. Plans have been formulated for the blacking out of all buildings.

One preliminary test blackout was held to determine if the controls for all lights were known. Departments were advised, in advance, of the exact time of the blackout and practically all lights were extinguished within one minute of the start of the warning signal. This test was considered successful and indicated the complete cooperation of all personnel in the plant. As plans are further perfected, other tests will be conducted without advance warning.

IN CASE OF FIRE

By O. C. Stief

Every employe should know just how to turn in an alarm in case of fire in or around the department in which he may be working. Every telephone in the Monsanto, Illinois, plant has a card pasted on the base of the phone, indicating the num-

ber, station and zone to call. In reporting a fire, if the individual will dial 200 and then read off the bottom line of the card there will be little or no chance of making a mistake.

When a fire call is turned in by telephone or by manual alarm, of which there are several stationed throughout the plant, the person turning in the alarm should station himself at a point so as to direct the firemen to the scene of the fire. This saves valuable time and gives the firemen direct contact.

The operation of the manual alarm is very simple. Lift the outer lid and inside will be found a small metal hammer with which to break the two-inch square of glass. When this glass is broken it releases a small pin which makes contact, turning the zone and station number in at the power house where the fire whistle is blown.

The first thing to do in case of fire, no matter how small it may seem, is to turn in an alarm. After the alarm has been turned in, try to extinguish the blaze with the small extinguisher you have in the department. On the wall or post to which the extinguisher is fastened there is a metal plate giving illustrated directions on how to use the apparatus. This plate also indicates the type of fire for which the extinguisher is best suited. For instance . . . the foamite extinguisher is best for oil fires, but can be used on any other *except* an electrical fire. Water and soda and acid are for the

ordinary fire. Extra precaution should be used in case of an electrical fire. The switch making contact with the pieces of equipment or motor involved should be pulled if at all possible. Use nothing but a fire gun to extinguish such a blaze.

There are countless ways in which employes can help in our fight against fires. One way is to cut down as far as possible on the use of well water for regular operations during a fire and until an all clear signal has been blown. Another is to be on the watch for things that cause fires, such as faulty electrical connections, bad or open switches, old rags, waste paper or any other combustible material that may be lying about. These hazards should be reported to a foreman. The foreman in turn should have the cause repaired or removed immediately. Persons not directly affected by a fire should remain at their posts. If by chance the fire should be in an adjoining department every precaution should be taken to close all possible valves, cover all tanks and stand by to help in any way to keep the fire from spreading.

The men who make up your plant fire department take pride in answering every call in record time. For men who have other regular duties to perform, they are to be commended for their interest and constant vigilance. With the cooperation of all of the men and women of the plant they can be depended upon to continue their good record.

Members of the plant Fire Department, under the direction of O. C. Stief, pose for the cameraman with their new fire truck. *X*



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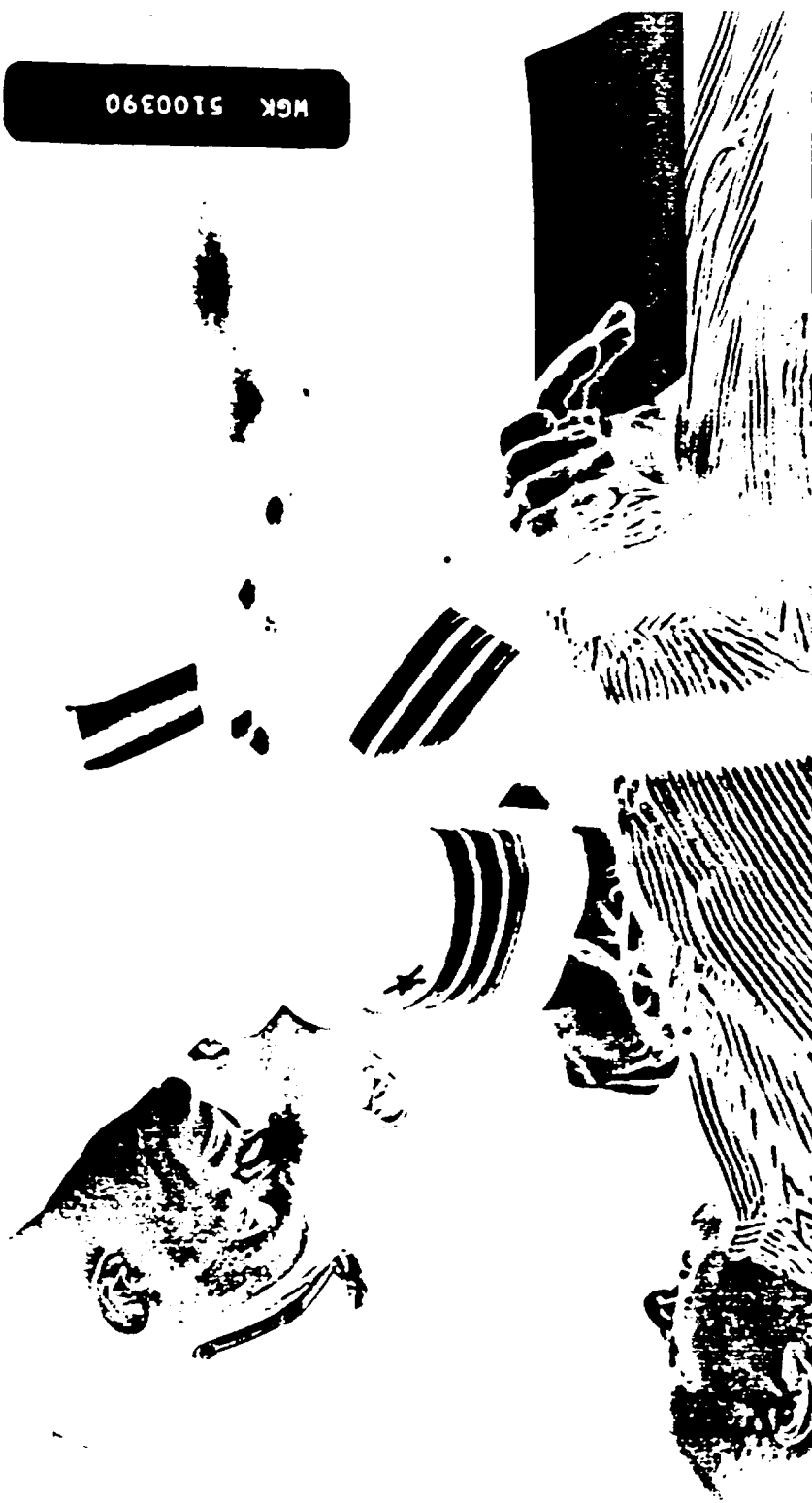
IN THE SERVICE



			 					
Adams	Akin	Barry				Bennett	Bollmann	Bradford
								
Buatte	Burckhardt	Byers				Cameron	Castle	Caudle
								
Chambers	Chapman	Clifton				Cochran	Conley	Connor
								
Croy	Culbertson	Davis	Dienell	Dolan	Donald	Duncan	J. Edwards	R. Edwards
								
Ellerbush	Erkman	Fallor	Fauss	Fears	Fitzgerald	Fontana	Frees	Gates
								
Gehrig	Good	Grandcolas	Gray	Green	Gummersheimer	Guthrie	Haider	Hall
								
Hamaker	Hampsch	Hassett	Hermann	Hartman	Hatfield	Hemminghaus	Hoefler	Hollis
								
Holt	Hubbell	Hubert	Jackson	Jahr	Johnson	Juracek	Kennedy	Kopsky

Seated under the service flag in the cafeteria are G. E. Brown, W. P. Orr, C. Barbre and R. L. Miller. Each star represents a man.

Commander W. F. Veatch, Commander of the 6th Naval Area, St. Louis, presenting an "E" pin to L. Purcell of the Army-Navy award ceremony, January 5, 1943. Commander Veatch made a token presentation of the pins to Purcell and Charles Johnson of the Chemical Warfare Service plant and to William Lincey, H. H. Hundman and R. Pullum of the Monsanto, Illinois plant, who have the longest continuous Monsanto, Illinois, service records at their respective plants. Otto Butler, president of Chemical Workers Local 20,002, received and acknowledged the pin on behalf of the employees of both plants.



MGM 5100390

THE FORTY-NINTH

ANNUAL REPORT

1940

MONSANTO CHEMICAL
COMPANY

SERVING INDUSTRY... WHICH SERVES MANKIND

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A new contact sulfuric acid unit was erected at our Monsanto, Illinois, plant to provide for our growing consumption and increased sales.

Ground was broken in Trenton, Michigan, which is in the vicinity of Detroit, for a new plant for the production of phosphate salts. This location was chosen because of the availability of raw materials and the proximity of the market for its products. We expect to substantially decrease present operating costs, and we anticipate that the additional capacity will be required in the near future. We believe that the location of this plant, which has available to it water transportation, will have advantages that other divisions will avail themselves of for expansion and the manufacture of new products.

Many other projects of lesser magnitude were either completed or undertaken during the year.

National Defense

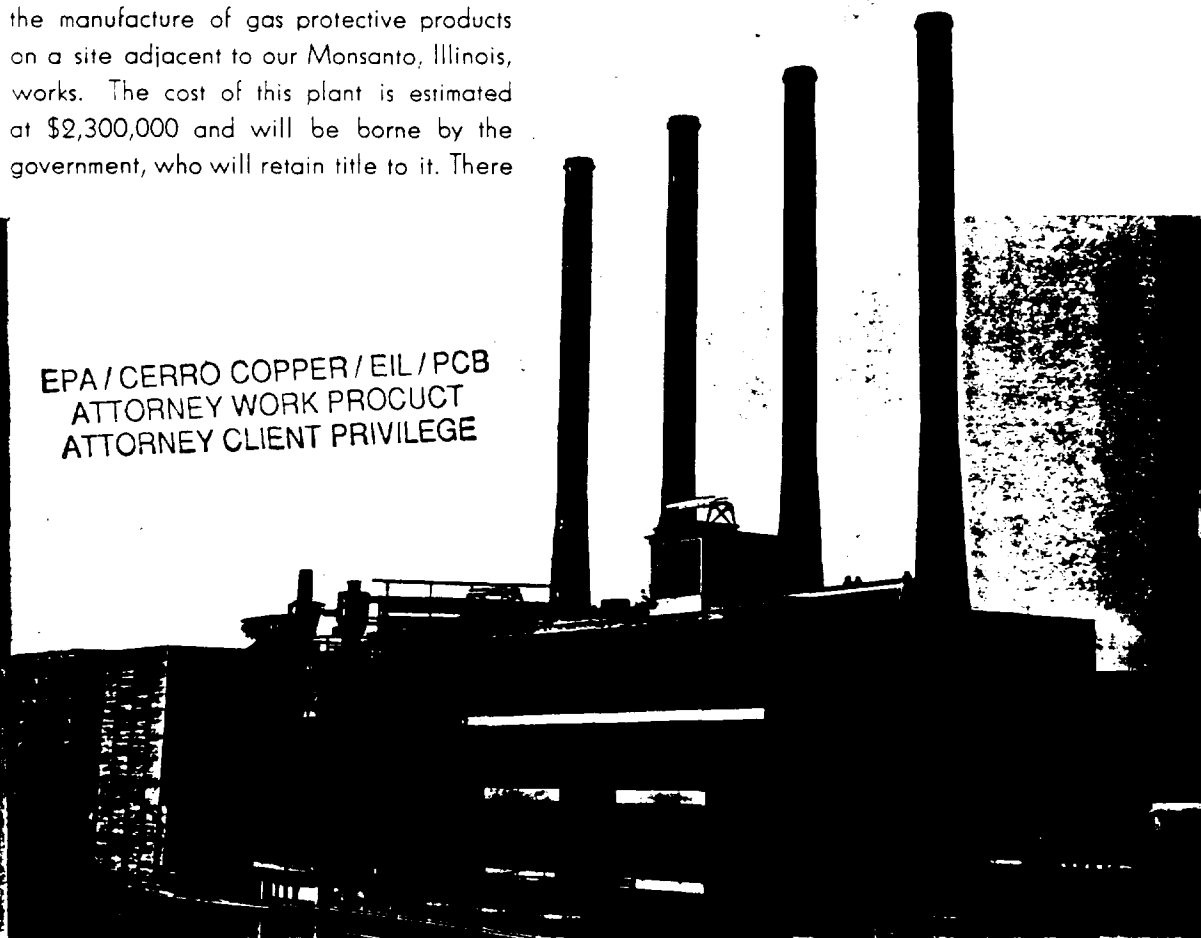
ALL OF OUR FACILITIES and personnel are at the disposal of our government and we are cooperating in the matter of research and construction, on a basis which will yield stockholders neither a profit nor a loss.

Construction has started on a plant for the manufacture of gas protective products on a site adjacent to our Monsanto, Illinois, works. The cost of this plant is estimated at \$2,300,000 and will be borne by the government, who will retain title to it. There

16

New power plant at
St. Louis, commenced 1940
and future needs

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8

Fortieth
ANNUAL
REPORT

1941

MONSANTO CHEMICAL
COMPANY

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ATTORNEY CLIENT PRIVILEGE

Nitration capacity was increased for the production of dinitrochlorobenzene from which tetryl, a high explosive, is made. New fermenters and a new distilling unit have almost doubled our capacity for industrial alcohol needed for smokeless powder.

Our phenol plant will have undergone two major increases by the middle of 1942, bringing total capacity to approximately twice that of a year ago. A new contact sulfuric acid plant is under construction to supply oleum for TNT manufacture and sulfuric acid for increased aluminum output. Construction is also under way on a complete new chlorine plant. The shortage of aniline, a product Monsanto discontinued in 1933, caused us to re-enter the business, and a new plant is being constructed.

We completed in record time a major expansion of our diphenyl plant, some of the capacity of which is going into Navy materiel and power transformers. At Monsanto, Tennessee, the operation of our fourth electric furnace, completed January 5, 1941, has permitted us to supply greater quantities of phosphorus to the Army and Navy and for lend-lease shipments.

Construction has been started on a plant for the manufacture of Santocel, a silica aerogel which offers exceptional promise in the insulation field.

The construction of our Trenton, Michigan, plant was delayed because of the difficulties in obtaining equipment. Priorities now in hand, however, promise its completion within the coming few months.

War Plants

WE ENTERED 1942 with four major war plants either under construction or on drawing boards. A plant constructed for the Chemical Warfare Service was turned over to the Army in January.

Under way and also to be operated by our personnel is a second plant for the Chemical Warfare Service.

The two Chemical Warfare Service plants are being constructed with government funds, and the government will retain title to the properties.

Shutting off of rubber imports and the subsequent demand for rapid increases in the

M O N S A N T O C H E M I C A L C O M P A N Y

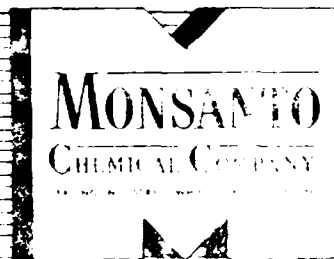
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ATTORNEY CLIENT PRIVILEGE

②

FORTY-FOURTH

1945

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ATTORNEY CLIENT PRIVILEGE



Following is a comparative summary of income for the years 1945 and 1944:

	1945	Per Cent of Net Sales	1944	Per Cent of Net Sales
Net sales	\$95,339,391	100.0	\$87,953,659	100.0
Government fees, less taxes	178,059	.2	205,653	.2
Other income	724,501	.7	623,657	.7
Total	<u>\$96,241,951</u>	<u>100.9</u>	<u>\$88,782,969</u>	<u>100.9</u>
Cost of goods sold	\$70,221,606	73.6	\$65,894,374	74.9
Selling, administrative and research expenses	10,116,703	10.6	8,567,290	9.7
Income charges	660,041	.7	597,116	.7
Income applicable to minority interests	69,261	.1	43,722	.1
Estimated income taxes, less portion allocated to Government fees	9,856,337	10.3	8,810,561	10.0
Total	<u>\$90,923,948</u>	<u>95.3</u>	<u>\$83,913,063</u>	<u>95.4</u>
Net income	<u>\$ 5,318,003</u>	<u>5.6</u>	<u>\$ 4,869,906</u>	<u>5.5</u>
Preferred dividends	890,000		890,000	
Earnings for common stock	<u>\$ 4,428,003</u>		<u>\$ 3,979,906</u>	
Per share	\$3.49		\$3.14	

After the Presidential proclamation of September 29, terminating the emergency period with respect to certificates of necessity, the unamortized cost of facilities constructed under these certificates was written off. \$2,082,902 of this amount was charged to 1945 earnings which, after taxes applicable thereto, amounted to \$300,431 or 24 cents a share. The balance, \$2,466,961, less the related reduction in income tax, was charged to earned surplus. For comparative purposes the above income account for 1944 has been adjusted to reflect the additional amortization applicable to that year.

After an examination of 1944 earnings the Renegotiation Board again required no refund.

Following V-J day the contracts covering the operations of the Chemical Warfare Service Plants at Monsanto, Illinois, and the Ordnance Department Plant at Marshall, Texas, as well as certain other war contracts, were canceled. Work in connection with the termination of these contracts has either been completed or is in process, and settlements are being made in conformity with regulations controlling termination of war contracts.

Claims for refund of Federal excess profits taxes for the current and prior years have been or will be filed under the special relief provisions of Section 722 of the Internal Revenue Code. The amount of relief which may be granted cannot now be determined.

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REPORT OF FORTY-FIFTH OF MONSANTO STOCKHOLDERS



THE MONSANTO YEAR OF 1945

JANUARY 18... Twelve-hour work stoppage at Nitro, West Virginia, plant—4,260 man hours lost.

JANUARY 24... Production of Resloom for shrink-controlled and crease-resistant textile announced.

FEBRUARY 12... Production of war chemicals started for CWS at Monsanto, Tennessee.

FEBRUARY 20... Clearance received on renegotiation of 1943 profits.

MARCH 5... Dr. L. P. Kyrides, research director, received first Midwest Award, St. Louis A. C. S.

MARCH 20... Vice Presidents Gaston DuBois and Francis J. Curtis join U. S. Army CWS mission to investigate German chemical plants. R. W. Sudhoff, Dayton, to join them.

MARCH 20... DDT marketed by Monsanto as Santobane.

MARCH 25... Cancellation of CWS plant contract. Monsanto, Tennessee.

MARCH 27... Forty-fourth annual meeting of Monsanto stockholders.

APRIL 5... New series of casting sealants developed. Offers replacement of foreign-produced tung oil.

APRIL 12... New applications of vinyl butyral announced. Makes fabrics washable with damp cloth.

APRIL 26... Dr. Charles Allen Thomas elected a vice president and member of Executive Committee.

APRIL 26... Dr. C. A. Hochwalt succeeded Thomas as director of Central Research department.

MAY 8... VE-Day. No cessation of work.

MAY 18... Contract cancellations at CWS plant, Monsanto, Illinois.

MAY 24... Styramic HT, new thermoplastic, developed at Springfield laboratories, announced.

JUNE 4... One-day work stoppage at Monsanto, Illinois, in violation of union contract.

JUNE 6... One-day work stoppage by ironworkers at Monsanto, Illinois, in violation of union contract.

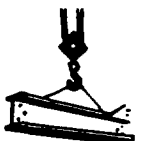
JUNE 21-23... Work stoppage at Monsanto, Illinois, plant in violation of union contract.

JUNE 26... Fred Renner, general sales manager, Organic Chemicals Division, died.

JUNE 27... Brief work stoppage at John F. Queeny plant in St. Louis in violation of union contract.

JUNE 28... Construction of \$450,000 unit at Everett for production of Santocel announced.

JULY 1... Monsanto assumed operation of Clinton Laboratories, Oak Ridge, Tennessee.



... the Monsanto Year of 1945

JULY 16... First atomic bomb released, Los Alamos desert. Viewed by Dr. Charles A. Thomas, director of plutonium project.



JULY 26-SEPTEMBER 7... Illinois plant closed by jurisdictional strike in violation of union contract.

JULY 27... Robinson Ord appointed general sales manager, Organic Chemicals Division.

AUGUST 7... Monsanto's part in development of atomic bomb disclosed by War Department.

AUGUST 11... Seattle, Washington, tract of land acquired for modern plywood adhesives plant.

AUGUST 14... Victory over Japan announced. Monsanto closed, except for skeleton organization, August 15 and 16.

AUGUST 17... 188 members of Central Research department received NDRC Award Certificates for work on rocket propellents.

AUGUST 21... Monsanto's role in development of Doron, used as plastic body armor, announced.



AUGUST 21... Cancellation of contracts for production of TNT and rocket launching propellant at Karnack, Texas.

AUGUST 28... Increased production facilities planned for Santomerse, a Monsanto wetting agent.

SEPTEMBER 1... Gaston DuBois, vice president and director, retired. Dr. C. A. Thomas succeeded him on Executive Committee.



SEPTEMBER 13... 151 expansion projects, involving estimated \$48,000,000, announced.

SEPTEMBER 25... W. M. Rand elected president of Monsanto. Charles Belknap becomes chairman, Executive Committee.

OCTOBER 1... Newly developed cloth coating of vinyl butyral announced. Flexible at 0° F.



OCTOBER 23... Plans revealed for building first large-scale plant for manufacture of synthetic caffeine.

OCTOBER 23... Project approved for manufacture of maleic anhydride, a resin base.

OCTOBER 23... Skylac, new aircraft lacquer which reduces fire hazards, announced.



OCTOBER 31... Contract cancelled for experimental work on rocket launching propellant. Work continues under auspices of U. S. Ordnance department.

NOVEMBER 27... Charles S. Cheston, Philadelphia, elected to Board of Directors.

DECEMBER 3... Alkylolation unit at Texas City plant damaged by fire. Estimated loss, \$500,000.

DECEMBER 13... Thermoplastics which glow eight hours after exposure to sunlight announced.



DECEMBER 31... Monsanto employment at all-time high of 10,490. Reemployed returned Monsanto veterans total 850. In addition, 941 non-Monsanto veterans employed.

Research Takes Courage and Vision

By Dr. Charles Allen Thomas

MONSANTO EMERGES FROM THE WAR with the largest research team in its history, a team which contributed much to the war effort. The list of contributions is long and impressive and runs, to a large degree, the gamut of the nation's chemical and chemical engineering problems encountered during the war crisis.

We were called upon to develop processes and construct and operate plants of a multi-varied nature: styrene for synthetic rubber, TNT and other explosives, saltwater soap for the Navy, pharmaceuticals and intermediates to produce lifesaving drugs, fire-resisting paints, plastics which would stand high temperatures, plastic armor of extraordinary resistance to missiles, war gases which mercifully were not used, rockets and a new type of rocket propellant.

Much experience has been gained from this war work and some of this experience will be used in our company's postwar program. Many of the more advanced techniques stemming from the war will serve as tools to attack peacetime problems; but most important there has been developed seasoned teams who have learned to work together. Our technical men carried heavy loads during the war but like fine copper they toughened in their working process. They served their nation well and are a credit to their profession and their company.

The question of how good is Monsanto's research and technology is difficult to answer. One of the principal difficulties which has faced us is the unavailability of technical men. It will be recalled that this was predicted at our meeting last year, when the policies of selective service in refusing deferment to technical students was discussed. The continuation of that policy in the last year has made itself felt in Monsanto through the unavailability of trained men who would normally be added to our research force. The quality of industrial research cannot be evaluated easily or its performance compared with research organizations of other companies. One of the reasons is because it takes several years to bring to fruition products of research activities. Contrary to some beliefs, the amount of money and the number of men involved in research is not an accurate criterion of the quality of the work. By accounting principles the efficiency of a production or sales department may be determined, but this is not true in assaying the worth of industrial research. It is all too easy for the executive to gauge his research organization by

merely looking at the amount of money spent and the number of men involved. Even if this were a factual guide, which it is not, it would be most difficult to compare one company's research budget with another. Most concerns do not show a breakdown of their research and development expenditures and the items vary in many cases. For example, some concerns include all technical sales expense under their development costs—others do not. This is easily understandable when the great diversity of products sold by chemical companies is considered.

Industrial research has learned to rely very largely upon team play. The very nature of successful research and the development and engineering teams call for understanding, leadership and a great deal of patience. In a group of industrial scientists working on a highly technological problem, no one man is responsible for the overall success of the undertaking. The picture is painted by many brushes—by many types of men with different backgrounds, trained in different fields of science. The chemist, the physicist, the development engineer, the pilot plant technicians and the designing engineers all place their color and shading upon the canvas and the picture as a whole is a composite of their combined abilities.

There are other factors of a more fundamental nature which will affect the future of your company's endeavors in this field. First, I believe better scientific training is needed in our colleges and universities, particularly of a fundamental nature. Our universities have become exceedingly interested in conducting industrial research in the last decade. I have no quarrel with this, particularly as it offers professors a closer contact with industrial problems. But if this interest is crowding out the universities' primary role of fundamental research and training, it may be extremely detrimental to the future of our nation.

To illustrate this point, in the field of organic chemistry, the chemical industry has made very wide industrial applications. Industry today, however, is catching up with the fundamental knowledge and is becoming anxious for more basic facts. Unless this knowledge is available within a reasonable time, the whole field of organic chemistry and its numerous allied fields, such as chemotherapy, will be slowed down.

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

The war work threw together large groups of academic and industrial scientists. These groups did not understand each other too well at first, but perhaps a better understanding and a mutual respect has been gained from this close association. Certainly it should have afforded the pedagogue an opportunity to appraise his own products, his graduates, and to gauge how well they were fitted for the world. One point seems obvious, that specialists can have over-specialization, and that a highly scientific education often makes a narrow man. Before this scientist can take his proper role in world affairs, it is important that he have a better realization that others, outside the world of science, have much to contribute to life and living. Our educators should be interested in considering these observations and realize that in the ever-increasing complexities of society, the human spirit cannot find its proper growth if fed science alone.

Industry and business account for a large part of the activity of American life. Some of our younger scientists are not sufficiently cognizant of the American industrial system, its relation to its stockholders, the role of management, the struggle to find customers, and the complexity of the paramount issue today, the relationship between management and labor. If the scientist is to assume a broader role, it is important that he broaden his capacities.

Industrial research organizations also have learned much from their experience in the war's giant cooperative enterprise. First of all there is a new appreciation of the great gap between the technologist and the fundamental scientist. In this era, when the time between a fundamental discovery and its industrial application has been so greatly reduced, it is important that each understand that the one complements the other. On the other hand, the industrialists need to have a greater understanding of fundamental research and a deeper understanding of this fountainhead from which all industrial applications must spring.

Management should be cognizant of a greater responsibility toward its scientists and technologists and it should recognize this obligation by attempting to increase the stature and dignity of the scientific profession in industry. This can be encouraged by consulting more often with our men of science on policy matters.

One of the great problems in running an industrial laboratory is to prevent our technical men from growing stale. They need the contact of the academic circles to stimulate their thinking. Perhaps we should establish in our laboratories something akin to the sabbatical leave which is practiced in our universities. During that leave we should encourage our men to return to the campus for refresher courses.

If it could be arranged, it would be helpful to have these men give a few lectures on subjects in which they have specialized. Could the reverse be arranged with university men? This is a question which should be explored.

With the nuclear fission plants now a reality, unquestionably the role of physics in the next decade will be emphasized. Even now we see increased enrollments in the physics courses in most of our universities. Industry needs more physicists and part of the graduates in physics in the coming years will be absorbed in industry. This should be a great stimulus to our engineering group. We need engineers with a broad scientific training, and not men who with hand-book and slide rule alone attempt to solve all of life's problems by fitting only the known factors into an established formula.

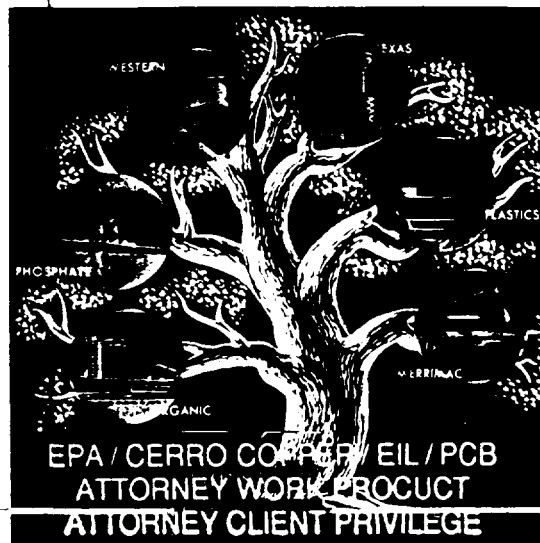
These are some of the factors involved in an industrial research organization. Monsanto has a large research and development program, coupled with knotty engineering problems which challenge our ingenuity. What percentage of this endeavor will materialize in new plants and products is unpredictable, but we expect it to be a large one. It is highly important that continuity be maintained in these programs. Unless we are prepared to follow through the long term research programs now under way, the expenditures already made would be lost. In Monsanto, we are expanding our facilities for research in line with our expected growth. We have authorized a new laboratory at our Merrimac Division headquarters in Everett, Mass., and during 1946 expect to make further additions to our research facilities. Monsanto is already basic in a number of fields and this basic position should be secured in others, and from these roots we should have a great flowering of applications. We have the optimism characteristic of all research people and we see many opportunities for expanding the fields of our present activities.

Monsanto operates two locations of the Manhattan District; one in Dayton where an essential ingredient was developed and produced and the Clinton Laboratories near Knoxville, Tennessee. The important work at Dayton is still classified, but some of the work at Clinton has been publicized. Another high point in the record of our chemists is the successful synthesis of the complex molecule of caffeine, a product which became scarce during the war. A plant based on this work is now being engineered and constructed.

Let us look for a moment at the 1945 album of Monsanto developments—the list is too long to enumerate here but the following pictures highlight the more active developments.

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

Report of Forty-Sixth
ANNUAL



MEETING

of Monsanto Stockholders

The Monsanto Year of 1946

January 16

EXAN announced, synthetic tannin to replace use of chestnut bark.

February 26

Construction started. Polystyrene plant for Monsanto Ltd., Canada.

March 14

Monsanto plastic, Thalid, molded successfully into boats, caskets.

April 15

Erection of plant for manufacturing thermoplastic started in Springfield.

March 28

Mildew-proofing compounds for textiles developed from Copper 8-Quinolinate. Trade named Milmer by Monsanto.

April 14

Announcement of plans to construct first peacetime Atomic energy electric power plant, at Oak Ridge, by Monsanto.

April 23

Consolidation of Monsanto Ltd., Canada, and I. F. Laucks Ltd., Vancouver, B. C.

April 30

316,967 shares of new issue Convertible Preference stock offered for sale to common shareholders.

May 16

Instituted one year academic leaves for approved Monsanto scientists.

May 22

Announcement of construction, new \$3,000,000 plant, Monsanto, Illinois, for Santomerse (wetting agent, detergent).

June 5

National distribution of Radioisotopes from Clinton Laboratories, Oak Ridge Tenn., started.

June 13

Four-month strike for union shop at John F. Queeny plant begins 1:30 p. m.

June 14

New insecticide, Niphos, having properties similar to nicotine, went into production.

July 1

Charles Belknap, chairman of the Executive Committee, reaching age limit, retires.

July 15

Leased CWS plant, Monsanto, Illinois, from government for five years. \$1,000,000 required for alteration to make peacetime products.

July 18

Monsanto, Illinois, plant closed by strike. Same issue.

July 24

Stockholders approved 3 for 1 increase of authorized common capital stock and cancellation of charter authorization for old preferred stock.

July 24

Everett, Mass., plant went on strike. Same issue.

July 29

Illegal work stoppage, Carondelet Plant. Union members refuse to cross picket line.

July 30

Injunction suit stops picketing at Carondelet.

July 31

Sterox, new, non-sudsing synthetic detergent, announced.

September 6

Advanced training program in nuclear physics began at Oak Ridge.

October 16

All strikes settled. Work resumed without union shop and master contracts. Other issues compromised.

November 5

National Institute of Health, U. S. Public Health Service, to co-operate on biological research at Oak Ridge.

November 8

Announcement 25-year, \$30,000,000 Debenture Issue to pay for new construction.

November 14

Sales Office opened in Cleveland, Ohio.

November 16

\$4,000,000 expansion, Monsanto, Ill., approved by government.

November 27

Announcement, year-end dividend of 25 cents per share of common stock.

December 5

Plastic Division announced Cincinnati Sales Office to open January 1.

December 15

Mr. Theodore Rassieur, director since 1921 and general counsel of Monsanto, since 1910, passed away.

December 17

Board of Directors approved plans for 40% increase of phosphorus production at Monsanto, Tennessee.

December 20

Dr. Charles Allen Thomas chosen president-elect of American Chemical Society.

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F O R M 10-K
FOR CORPORATIONS
ANNUAL REPORT

(1940)

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**Return to Office
of the Secretary**

MONSANTO CHEMICAL COMPANY
ST. LOUIS, U. S. A.

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ATTORNEY WORK PRODUCT
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v C24489

BUSINESS

7. Describe briefly the material changes which may have occurred within the fiscal year in the general character of the business done by the registrant and its subsidiaries.

In 1940 the registrant entered into an arrangement with Australian interests for the joint development of chemical manufacture in Australia, under which the registrant supplies processes and manufacturing information and the Australian interests supply the capital required for manufacturing facilities. The registrant is to receive one-half interest in the ordinary or common shares and the Australian interests are to receive the other half interest in the ordinary or common shares plus preference shares or a preferred claim equal to the capital and tangible assets contributed by them.

The registrant began, in the Fall of 1940, the construction of a sodium phosphate plant near Detroit in Wayne County, Michigan, which will displace part of the phosphate product operations at the Anniston, Alabama, and Monsanto, Illinois, plants. Operating economies and freight savings are expected to be effected.

The registrant entered into a contract for the construction of a war chemical manufacturing plant for the United States Government at Monsanto, Illinois, estimated to cost \$2,282,000., on a cost plus fixed-fee basis upon which the registrant does not expect to make any profit. Upon completion, it is expected that the registrant will be requested to operate such plant for the account of the Government. It is probable that in the future the registrant will be requested to assist the United States Government in other projects under the national defense program.

Monsanto Chemicals Limited, the registrant's British subsidiary, is operating at a very high percentage of its capacity. The registrant has not been advised of any damage to its British subsidiary's plant properties resulting from enemy action. Some of the export markets formerly served by the British subsidiary are being supplied by the registrant, and because of limitation of exports from other European countries resulting from the war, the registrant has increased its participation in the South American and Far Eastern markets. Because of the uncertainties created by the war abroad, international exchange restrictions imposed by the British government and uncertainty of future dividend payments by the British subsidiary, separate financial statements are being filed for the British subsidiary and its operations have been excluded from the registrant's consolidated financial statements.

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F O R M 10-K
FOR CORPORATIONS
ANNUAL REPORT
(1941)

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of the Secretary

MONSANTO CHEMICAL COMPANY
ST. LOUIS, U. S. A.

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

v 024490

BUSINESS

7. Describe briefly the material changes which may have occurred within the fiscal year in the general character of the business done by the registrant and its subsidiaries.

In January, 1941, the operations of the Edgewater, New Jersey plant were transferred to a new and larger plant built by the Company for that purpose at Springfield, Massachusetts, as an addition to the Company's Plastics Division plant at that location.

In 1940 the Company entered into an arrangement with Australian interests for the joint development of chemical manufacture in Australia, under which arrangement the Company supplies processes and manufacturing information and the Australian interests supply the capital required for manufacturing facilities and operations. Construction of the plant was seriously delayed during 1941 by difficulties in obtaining equipment. It is expected that the plant will be placed in operation during 1942. The Company has been issued one-half of the ordinary or common shares. The Australian interests have been issued the other half and will receive a preferred claim equal to the capital and tangible assets contributed by them.

The Company is now constructing a sodium phosphate plant near Detroit in Wayne County, Michigan, which will be completed in 1942 and will displace part of the phosphate operations at the Anniston, Alabama, and Monsanto, Illinois, plants. Operating economies and freight savings are expected to be effected. The Government has requested the Company to utilize the furnaces so displaced at Anniston, Alabama, for the manufacture of certain alloys.

Monsanto Chemicals Limited, the Company's British subsidiary, is operating at capacity. The Company has not been advised of any damage to its British subsidiary's plant properties resulting from enemy action. Prior to the entrance of the United States into the war on December 9, 1941, some of the export markets formerly served by the British subsidiary were being supplied by the Company and the Company had increased its participation in the South American and Far Eastern markets. Since the declaration of the war, however, all such exports to the Far East have been shut off.

In 1941 New England Alcohol Company sold 340 shares of its Class A common shares pro rata to its stockholders (The Company and Central Aguirre Associates) for \$238,000. These proceeds were used to enlarge that company's capacity for the manufacture of alcohol.

The Company has undertaken to construct or to furnish consultant service in connection with the construction for the Government of a number of plants to manufacture products required for the war program, and to operate the plants for account of the Government when completed. The Company is making no capital investment in these plants and will not own the plants or their equipment and machinery. The Company's compensation is generally upon a fee basis.

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ATTORNEY WORK PRODUCT
ATTORNEY CLIENT PRIVILEGE

One of these plants has recently been completed for the Chemical Warfare Service, and the Company is now constructing a second plant for the same Service. The operation of the completed plant is about to commence. The Company is furnishing consultant service in connection with the construction for the Ordnance Department of a plant for the manufacture of a war material and has undertaken to operate the plant for account of the Ordnance Department for a fixed fee per unit of the material produced. It is constructing a plant to be owned by and operated for Reconstruction Finance Corporation (Defense Plant Corporation and Rubber Reserve Company) for the production of a raw material used in the manufacture of synthetic rubber. Negotiations in progress for the operation of the plant by the Company contemplate that it will receive a fixed fee per pound of material produced for Rubber Reserve Company, and may retain a specified percentage of the production for its own use at cost plus a fee per pound varying with the amount of the material produced for Rubber Reserve Company.

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F O R M 10-K
FOR CORPORATIONS
ANNUAL REPORT
(1942)

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**Return to Office
of the Secretary**

MONSANTO CHEMICAL COMPANY
ST. LOUIS, U. S. A.

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V 024491

6. As to any options outstanding at the close of the fiscal year to purchase securities of the registrant: (a) state the amount, with the title of the issue, called for by such options; (b) outline briefly the prices, expiration dates, and other material conditions on which such options may be exercised; (c) give the name and address of each person holding such options calling for more than five percent of the total amount subject to option, and give the amount called for by the options of each such person; and (d) for each class of such options not previously reported state the consideration for the granting thereof.

N O N E

BUSINESS

7. Describe briefly the material changes which may have occurred within the fiscal year in the general character of the business done by the registrant and its subsidiaries.

In 1942 the registrant acquired 50% of the capital stock of Monsanto (Canada) Limited which was formerly owned by the registrant's subsidiary company, Monsanto Chemicals Limited.

The company's sodium phosphate plant near Detroit in Wayne County, Michigan was completed in 1942 and placed into operation.

Operations of Monsanto (Australia) Proprietary Limited, an Australian Company in which the registrant has a 50% interest, were started in 1942.

In the registrant's annual report for the year 1941, the contracts in connection with the construction and operation of war plants for Chemical Warfare Service, for Ordnance Department and for Reconstruction Finance Corporation (Defense Plant Corporation and Rubber Reserve Company) were described. The plants for Chemical Warfare Service and the Ordnance Department commenced operations in 1942.

In July, 1942, the registrant contracted with the Chemical Warfare Service to extend the manufacturing facilities of these plants. Also, in 1942, the National Defense Research Committee requested the assistance of the registrant in laboratory research work and subsequently in the design, construction and operation of a pilot plant, embodying the results of such laboratory work to produce a new and confidential war product.

The registrant is making no capital investment in these plants and will not own the plants or their equipment and machinery.

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WAR DEPARTMENT
OFFICE CHIEF CHEMICAL WARFARE SERVICE 3-1
WASHINGTON, D. C.

In reply refer to CWS 160/1693
(2-12-42)

February 18, 1942


Mr. W. W. Schneider, Secretary
Monsanto Chemical Company
St. Louis, Missouri

Dear Sir:

Receipt is acknowledged of your letter of February 12, 1942, relative to contract W-266-CWS-119, dated November 4, 1940, advising this office that you are preparing plans to file with the Securities and Exchange Commission a Registration Statement on Form A-2 and a prospectus under the Securities Act of 1933, as amended.

In view of the fact that the subject contract is classified as Secret and Confidential, this is to advise you that the War Department desires to take advantage of rule 581 of the General Rules and Regulations of the Securities and Exchange Commission as outlined in your letter, and, further, it is desired that the contract number be deleted from this letter when filed with the Securities and Exchange Commission.

Very truly yours,



P. W. CROWELL
MAJOR, C.W.S.

EXECUTIVE ASSISTANT

P. X. ENGLISH

Brigadier General, C.W.S.
Chief, Industrial Service

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PROSPECTUS

35,000 Shares

MONSANTO CHEMICAL COMPANY

Cumulative Preferred Stock, Series C

(No Par Value—\$4 Dividend)

Redeemable at the option of the Company at any time in whole, or from time to time in part, upon not less than 30 days' notice, at \$100 per share and accrued dividends, plus, if redeemed on or prior to March 31, 1946, a premium of \$7.50 per share; or, if redeemed thereafter, a premium of \$5 per share.

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED
BY THE SECURITIES AND EXCHANGE COMMISSION

Monsanto Chemical Company Has Registered the Securities by Filing Certain Information With the Commission. The Commission Has Not Passed on the Merits of Any Securities Registered With It.

IT IS A CRIMINAL OFFENSE TO REPRESENT THAT THE COMMISSION HAS APPROVED THESE SECURITIES OR HAS MADE ANY FINDING THAT THE STATEMENTS IN THIS PROSPECTUS OR IN THE REGISTRATION STATEMENT ARE CORRECT

These shares of Cumulative Preferred Stock, Series C, are offered subject to prior sale and when, as and if issued, and subject to acceptance by the Underwriter, and subject to approval of Messrs. Ballard, Spahr, Andrews and Ingersoll, Counsel for the Underwriter, and Messrs. Rassieur and Rassieur, Counsel for the Company.

The Company has agreed to make application for the listing of these 35,000 shares of Cumulative Preferred Stock, Series C, on the New York Stock Exchange and for their registration under the Securities Exchange Act of 1934.

	Price to Public	Underwriting Discounts or Commissions†	Proceeds to Company
Total	\$3,692,500...*	\$87,500..	\$3,605,000
Per Unit	\$105.50....*	\$2.50.	\$103.00

*Plus accrued dividends from the date of issue, which will be the date of delivery and payment for these shares of Cumulative Preferred Stock, Series C.

†Reference is made to the Company's agreement to indemnify the Underwriter against certain losses as set forth on pages 8 and 9 of this Prospectus.

TO FACILITATE THE OFFERING, IT IS INTENDED TO STABILIZE THE PRICE IN THE OPEN MARKET OF THE SHARES OF CUMULATIVE PREFERRED STOCK, SERIES C, OFFERED BY THIS PROSPECTUS AND ALSO TO STABILIZE THE PRICES ON THE NEW YORK STOCK EXCHANGE AND IN THE OPEN MARKET OF THE SHARES HERETOFORE ISSUED OF THE COMPANY'S CUMULATIVE PREFERRED STOCK, SERIES A, CUMULATIVE PREFERRED STOCK, SERIES B, AND CUMULATIVE PREFERRED STOCK, SERIES C. THIS STATEMENT IS NOT AN ASSURANCE THAT THE PRICES OF THE ABOVE SECURITIES WILL BE STABILIZED OR THAT THE STABILIZING, IF COMMENCED, MAY NOT BE DISCONTINUED AT ANY TIME.

SMITH, BARNEY & CO.

No dealer, salesman or any other person has been authorized by the Company or by the Underwriter to give any information or to make any representations other than those contained in this Prospectus in connection with the offer contained in this Prospectus, and information or representations not herein contained, if given or made, must not be relied on. This Prospectus is not an offer by the Underwriter to sell said shares of Cumulative Preferred Stock, Series C, in any State to any person to whom it is unlawful for the Underwriter to make such offer in such State.

The date of this Prospectus is March 11, 1942

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ATTORNEY CLIENT PRIVILEGE

A Registration Statement relating to the securities referred to herein has been filed with the Securities and Exchange Commission and is being made a part of this Prospectus. The information contained herein is for information purposes only and is not to be considered a prospectus or as an offer to sell or the solicitation of an offer to buy the securities referred to herein. The information contained herein is not to be relied upon as a basis for investment decisions.

varied uses as flour bleaching; sweetening and flavoring agents; as ingredients of self-rising flour, baking powder and animal foods; and as adjuncts in butter, milk, cheese and canned food production. One of the most important products sold to the glass and vitreous products industry is laminating plastic for safety glass.

Condensed classifications of the largest consuming industries of the Company and its domestic subsidiaries listed approximately in order of volume of 1941 net dollar sales are as follows:

Pharmaceuticals, food, glass and vitreous products, plastics, rubber, paint, varnish and printing ink, colors and dyestuffs, metal fabrication, petroleum, paper and printing, laundry and cleaning, non-ferrous metals, iron and steel, textile, soap, leather, public utilities and municipalities, explosives, transportation equipment (air, land and water), perfumes and cosmetics, fertilizers, insecticides and germicides, and lumber.

The 1941 net dollar sales to the above listed industries were approximately 87% of the total net sales of the Company and its domestic subsidiaries.

The relative importance of the consuming industries changes with general economic and business conditions; through the development of new products and of new methods of production and new uses for old products; and has been and will continue to be affected by war measures such as Government restrictions, requirements, priorities and allocations.

The Company has undertaken to construct or to furnish consultant service in connection with the construction for the Government of a number of plants to manufacture products required for the war program, and to operate the plants for account of the Government when completed. The Company is making no capital investment in these plants and will not own the plants or their equipment and machinery. The Company's compensation is generally upon a fee basis.

One of these plants has recently been completed for the Government Warrenton Plant and the Company is now constructing a second plant for the same Government Warrenton Plant. The completed plant is about to commence. The Company is furnishing consultant service in connection with the construction for the Ordnance Department of a plant for the manufacture of a war material and has undertaken to operate the plant for account of the Ordnance Department for a fixed fee per unit of material produced. It is constructing a plant to be owned by and operated for Reconstruction Finance Corporation (Defense Plant Corporation and Rubber Reserve Company) for the production of a raw material used in the manufacture of synthetic rubber. Negotiations in progress for the operation of the plant by the Company contemplate that it will receive a fixed fee per pound of material produced for the Rubber Reserve Company, and may retain a specified percentage of the production for its own use at cost plus a fee per pound varying with the amount of the material produced for Rubber Reserve Company.

Among the more important raw materials purchased by the Company and its domestic subsidiaries are sulphur, benzol, alkalies (caustic soda and soda ash), molasses, naphthalene, acetone, butyl alcohol, butyl acetate, formaldehyde, acetic anhydride, toluol and cellulose acetate. They are also large purchasers of fuels and electric power. The Company owns deposits of phosphatic material which is used in the manufacture of phosphorus, phosphoric acid and its derivatives.

Monsanto Chemicals Limited, the Company's British subsidiary, is engaged in the refining of tar acids and in the manufacture of a line of organic chemicals such as phenol, phthalic anhydride, salicylic acid, aspirin, vanillin, rubber accelerators and anti-oxidants.

Research and experimental work constitutes an important part of the activities of the Company and its subsidiaries, and in 1941 research expenses of the Company and its domestic subsidiaries amounted to approximately 2.3% of their net sales. A number of research laboratories are maintained whose research and experimental work may be divided into three general classifications: first, the improvement and refinement of existing products and processes; second, the development of new products and processes; third, the development of uses for the products of the Company and its subsidiaries.

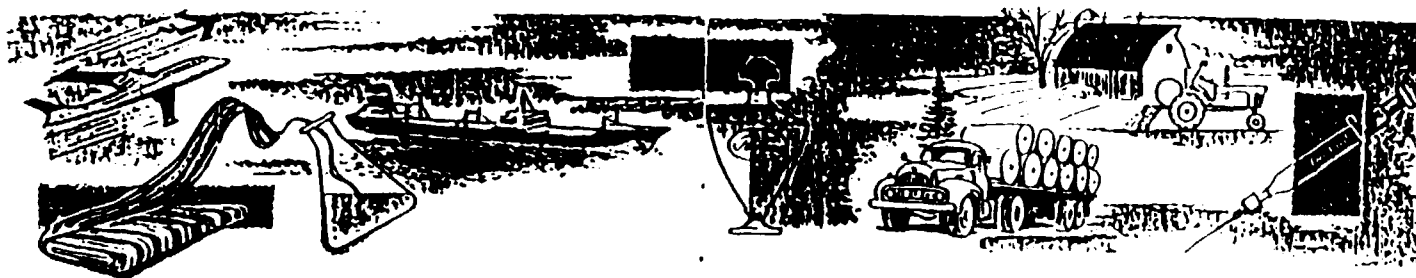
The Company and its subsidiaries own or are licensed under a large number of patents which relate to a wide variety of products and processes. The number of patents varies from time to time due to expiration of existing patents and to granting of new patents on applications filed by the Company as a result of its research and experience. While in the aggregate its patents are of material importance in the operation of its business, the Company does not consider that any patent or patents related to a particular product or process are of material importance when judged from the standpoint of the total business of the Company.

RECENT DEVELOPMENTS

Sales have materially increased in the past two years, largely as a result of the war in Europe and the defense program in the United States, and while this country's entry into the war is too recent to judge its effect upon the Company's business, present estimates do not indicate a decline in sales during the current year. The Company cannot determine, for the purpose of such estimates, the precise amount of its total production which may be said to be consumed at present in war and essential civilian uses. It believes, however, that the volume thus consumed is so substantial that the effect of war measures such as Government restrictions, requirements, priorities and allocations may be more to change the relative importance of

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Krummrich Plant Products and Industries Which Use Them

Agricultural

2, 4 Dichlorophenoxyacetic Acid
Muratic Acid
Nitric Acid
Phosphoric Acid
Santochlor
Santophen 20
Sulfuric Acid

Appliances

Muratic Acid
Phosphoric Acid
Sulfuric Acid

Automotive

Battery Acid
Caustic Soda
Chlorine
Muratic Acid
Nitric Acid
Phenol
Phosphorus Pentasulfide
Santolube Oil Additives
Tricresyl Phosphate (TCP)

Ceramic and Glass

Aroclors
Phosphoric Acid
Salt Cake
Santomerse

Cosmetics

Benzyl Chloride
Caustic Soda
Phosphoric Acid

Drugs and Pharmaceuticals

Benzyl Chloride
para-Chlorophenol
Phenol
Phosphorus Oxychloride
Phosphorus Trichloride
Potassium Phenylacetate
Santomerse
Santophen 1

Dyestuffs

Aniline
Chlorobenzene
ortho-Chlorophenol

Dyestuffs

Chlorosulfonic Acid
ortho-Nitroaniline
Dinitroaniline
Cyclohexylamine
para-Nitroaniline
Dinitrochlorobenzene

Graphic Arts

Dinitrochlorobenzene
Phenol
Santomerse

Insecticides and Fungicides

Cyclohexylamine
Santochlor
Phosphorus Pentasulfide
Phosphorus Pentoxide
2, 4 Dichlorophenol
Monochloroacetic Acid

Lumber

Santobrite
Santophen 20

Paper

Aroclors
Chlorine
Muratic Acid
Sodium Sulfite
Sulfur Dioxide

Plastics

Aroclors
40 Catalyst
para-Nitrophenyl
Phenol
Triphenyl Phosphate

Soaps and Detergents

Chlorosulfonic Acid
Santomerse
Fatty Acid Chloride
Dodecylbenzene

Textiles

Caustic Soda
Chlorine
Phenol
Phosphoric Acid
Tricresyl Phosphate

CER 000200

CER 000201

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